# A JURIDICAL ANALYSIS OF THE DOCTRINE OF THE CONTINENTAL SHELF IN THE PERSPECTIVE OF THE EMERGING USES OF THE OCEAN FLOOR: A STUDY IN THE PUBLIC ORDER OF THE OCEANS

by

Walter William Krieger

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By

Walter William Krieger, Jr.

B.A., 1959, Bellarmine College

LL.B., 1962, University of Louisville

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William Thomas Mallison, Jr., Professor of Law

# PREFACE

We must avoid the threat of anarchy in ocean space. The civilized nations would look foolish indeed if this last, vast physical frontier should become a sort of watery wild west where the exploiter with the biggest "sea shooter" could become "king of the seamount" at the expense of legitimate commercial or scientific activity by others.

- Senator Claiborne Pell[1]

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# INTRODUCTION

The term "emerging uses," as used in this thesis, refers to those uses of the ocean floor which are totally unassociated with the exploration for and exploitation of the natural resources. Virtually all the existing international and municipal legislation concerning the juridical status of the ocean floor has been primarily directed towards the extraction of wealth from the ocean floor, and little attention, even in the writings of jurists, has been given to the problem of claims to jurisdiction and control over areas of the ocean floor for purposes other than the exploration and exploitation of natural resources. It is now becoming painfully clear that the same technology which has enabled man to exploit the riches of the ocean floor has also made possible many new uses of the ocean floor totally unassociated with the extraction of wealth. Unfortunately, this overemphasis on the wealth value has led the coastal states and the world community in general to ignore the emerging uses.

This thesis maintains that the emerging uses will be an important factor in the final determination of the nature

and extent of the coastal state's authority over the continental shelf, in the delimitation of the area of exclusive coastal authority, and in the problem of balancing the exclusive interests of the coastal state with the inclusive interests of the world community.

At the present time the Convention on the Continental Shelf only recognizes the right of the coastal state to explore the continental shelf and to exploit its natural resources. Yet within the past few years the impact of the emerging uses on important coastal interests, both because of the nature of the activities and their propinquity to the coastal state, has resulted in the coastal state assuming jurisdiction and control over them, and there is a danger that the coastal state may feel compelled to extend its jurisdiction seaward to protect important coastal interests.

It seems certain that the emerging uses are going to cause some interference with the more traditional uses of ocean space, and there is a danger that decision-makers may irrationally attempt to foreclose any new use of ocean space by automatically applying inherited prescriptions under a rigid conception of the doctrine of the freedom of the seas. Such an attempt to limit the uses of ocean space is not in the common interest of the world community, and might well lead to eventual conflict which could destroy the existing

public order of the oceans. Instead, the decision-maker must seek to accomodate these emerging uses, and, when they conflict with the more traditional uses of ocean space, he must weigh and balance all factors relevant to the particular controversy in the context of the fundamental policies of the public order of the oceans, in order to arrive at a priority among the competing interests. This paper will attempt to provide the decision-maker with a methodology which will aid him in this important and complex task.

The relative newness of the doctrine of the continental shelf has left many problems unresolved. While it is maintained that the emerging uses will be an important factor in the solution of these problems, the complexity of the problems and the numerous factors relevant to their solution require that we treat the emerging uses in the total context of the doctrine and not in a vacuum. Only then can we truly understand the real impact of the emerging uses on the doctrine of the continental shelf.

Unfortunately, both time and space prohibit more than a brief discussion of the impact of the emerging uses on other aspects of the law of the sea. It is hoped, however, that the methodology provided for the accomodation of the emerging uses under the doctrine of the continental shelf will

be equally applicable for the accomodation of these emerging uses under all aspects of the law of the sea.

# I. HISTORICAL BACKGROUND

## A. Historic Claims to Exclusive Authority over Submarine Areas beneath the High Seas

It is a well established rule of customary international law that the sovereignty of the coastal state over its internal waters and territorial sea extends downward into the subsoil and seabed beneath them.[2] Because of the lack of existing technology there was little interest in the juridical status of the ocean floor beyond the limits of the territorial sea.

Occasionally claims were made to exclusive control over sedentary fisheries beneath the high seas, such as the nineteenth century claims of England to ownership of pearl and chank fisheries off the coasts of Ceylon and Bahrein, but these claims were based upon their historic nature and offer little precedent for claims to vast areas of the ocean floor. There were also instances of coastal states extracting minerals from beneath the bed of the high seas by means of tunneling from the mainland or islands within the territorial seas, but since these activities were begun from within the territory of the coastal state and conducted entirely beneath the bed of the high seas, coastal state control over these

activities was guaranteed and there was no possibility of conflict with the traditional uses of the high seas.[3]

## B. The Juridical Regime of the Continental Shelf

It was not until the middle of this century, when modern technology placed the rich offshore oil deposits within reach, that the coastal states suddenly became interested in the juridical status of the adjacent submarine areas lying beyond the traditional limits of coastal authority. The first real instance of a state laying claim to a vast area of the ocean floor occurred in 1942, when Great Britain and Venezuela divided between themselves the subsoil and seabed of the Gulf of Paria which lay outside the territorial waters of either state.[4] While the Treaty of Paria is an important precedent, it did not represent a policy of either state with regard to submarine areas in general, nor did it give rise to similar claims by other states. It was not until some three years later, in 1945, when President Truman issued his now famous Proclamation regarding the natural resources of the continental shelf contiguous to the United States,[5] that other states made "similar" claims and the doctrine of the continental shelf became an important concept of international law.

Within five years some thirty states had made some type of claim to jurisdiction and control over adjacent

submarine areas. Many of these proclamations, particularly those of some of the Latin American countries who sought to gain exclusive control over fisheries, made far more comprehensive claims to these submarine areas than did the Truman Proclamation, and amounted to claims of "sovereignty" over the continental shelf and the superjacent waters.[6]

In 1949 the International Law Commission began a study to codify the law of the sea, and it was agreed that the work would include the regime of the continental shelf.[7] In the Commission's 1956 Report to the General Assembly it was recommended that the United Nations convene an international conference on the law of the sea.[8] The Eleventh General Assembly approved the recommendation,[9] and the Conference on the Law of the Sea was held at Geneva, Switzerland, from February 24 to April 27, 1958.

The Conference was attended by the representatives of eighty-six nations and produced four seperate conventions on the law of the sea, one of which was the Convention on the Continental Shelf[10] (hereinafter referred to as the Shelf Convention). At the present time only thirty-nine states have ratified the Shelf Convention, but at least 107 nations now recognize the principle of exclusive coastal authority over the mineral resources of the adjacent submarine areas,[11] and the lack of protests with regard to the unilateral claims to

exclusive authority over the mineral resources of the continental shelf has led most jurists to regard the principle as a customary rule of international law.[12]

The Shelf Convention was far from successful in resolving all the problems related to the doctrine of the continental shelf. While it rejected the claims to jurisdiction and control over the superjacent waters and airspace, it only considered the right of the coastal state to explore the continental shelf and to exploit its natural resources, and did not consider what rights, if any, the coastal state has to use the shelf for other purposes. Since it had only considered the right of the coastal state to explore the shelf and exploit its natural resources, these were the only rights which the Shelf Convention sought to accomodate with the more traditional uses of ocean space. Finally, the Shelf Convention only vaguely delimited the area of exclusive authority under the mistaken belief that this would not present any problem in the immediate future. Yet dispite all its faults, the Shelf Convention, together with the work of the Conference and the International Law Commission, provide an excellent source for examining the doctrine of the continental shelf.

## II. THE NATURE AND EXTENT OF COASTAL AUTHORITY OVER THE CONTINENTAL SHELF

### A. Unilateral Claims to Authority over the Continental Shelf

The Truman Proclamation was a limited claim to "jurisdiction and control" over the "natural resources" of the continental shelf, and specifically provided that the claim in no way affected the status of the superjacent waters as high seas. While the Proclamation did not define the term "natural resources," the references to "petroleum and other minerals," and "pool or deposit," can leave little doubt that the claim was to the mineral resources of the subsoil and seabed, and not to the living resources of the superjacent waters.[13] This position is further strengthened by the fact that a second Proclamation was issued on the same day dealing with the policy of the United States with respect to coastal fisheries in certain areas of the high seas contiguous to the United States.[14]

Other unilateral instruments, however, did not limit the claim to jurisdiction and control over the natural

resources of the continental shelf, but instead claimed "sovereignty" over the subsoil and seabed itself.[15] Many writers could see little difference between claims to authority over the natural resources and claims to sovereignty over the subsoil and seabed.[16] These writers apparently were unable to foresee any use of the continental shelf which would not involve rights to the natural resources. As one writer commented:

> It is difficult to see what distinction there is between control over "natural resources" and control over the subsoil and sea bed themselves. Anything of value might be included in "natural resources," and any use or interference with the subsoil and sea bed might equally be regarded as a use of or interference with their "natural resources."[17]

Most of the American and British writers who argued that there was no real distinction between claims to jurisdiction and control over the natural resources and claims to sovereignty over the subsoil and seabed did not see any problem with the doctrine of usque ad coelum.[18] Professor Lauterpacht pointed out that sovereignty can be limited by other principles of international law, and that the sovereignty of the coastal state over its territorial sea is not incompatable with the inclusive right of innocent passage. Thus the sovereignty of the coastal state over its continental shelf would be limited by the doctrine of the freedom of the seas.[19]

Many of the Latin American nations, however, did use the theory of sovereignty as a basis for claiming jurisdiction and control over the resources of the superjacent waters. Under the theory of "contiguity" they argued that the continental shelf was a natural prolongation of the land mass, and as such, was an integral part of the territory of the coastal state.[20] This meant that the shelf belonged to the coastal state ipso jure, and the proclamations were issued merely to "confirm" this right.[21] The Latin American states also argued that the United States' Proclamation on coastal fisheries had recognized the exclusive right of the coastal state to jurisdiction and control over the living resources of the epicontinental sea.[22] This was, however, a deliberate misreading of the instrument. The Proclamation establishing conservation zones over fisheries in certain areas of the high seas contiguous to the United States applied only to those fisheries which were operated exclusively by nationals of the United States. Where the fisheries were operated by nationals of other states exclusively or jointly with United States nationals, the conservation zones were to be established by joint agreement with the other states involved. Thus the Proclamation was not a claim to sovereignty over an area of the high seas, nor was it a claim to exclusive control over fisheries.[23]

It is not too surprising that some of the Latin American nations made claims to exclusive authority over the living resources of the superjacent waters. The continental shelf is very narrow along the entire Pacific coast of South America, and the technologically underdeveloped nations of Latin America could derive little economic benefit from the recognition of exclusive authority over mineral resources. Exclusive control over fisheries, on the other hand, would yield substantial economic returns from the control and licensing of foreign fishing vessels.[24]

It is interesting to note that the United States and other nations sent protests to those nations claiming jurisdiction over the superjacent waters,[25] but that no protests were made to those nations claiming sovereignty only over the subsoil and seabed of the continental shelf. Thus it would seem that the protests were not objections to the nature and extent of the authority claimed over the subsoil and seabed, but rather were objections to claims of authority over the superjacent waters which are a part of the high seas. As will be shown later, the objection to the use of the terms "sovereignty" and "sovereign rights" at the 1958 Conference was not so much a disagreement as to the nature and extent of the authority claimed over the subsoil and seabed itself, as

it was a fear that the use of the terms might give rise to claims to authority over the superjacent waters.

## B. History of Article Two of the Shelf Convention

The first draft articles of the International Law Commission, adopted in 1951, defined the rights of the coastal state over the continental shelf as "jurisdiction and control for the purposes of exploring it and exploiting its natural resources."[26] In the commentary on Article 2, the Commission explained that the authority of the coastal state over the continental shelf was "solely for the purpose stated," and that it had avoided the use of the term "sovereignty" because the right of the coastal state to explore and exploit the resources of the shelf "cannot be placed on the same footing as the general powers exercised by a State over its territory and territorial waters."[27]

In 1953, the Commission changed the wording of draft Article 2 to read: "The coastal state exercises over the continental shelf sovereign rights for the purpose of exploring and exploiting its natural resources."[28] The Commission made it clear, however, that the wording in no way affected the status of the superjacent water or airspace.[29]

During the International Law Commission's final draft of the articles on the law of the sea, in 1956, the

1953 draft Article 2 became draft Article 68, but the wording of the article was unchanged. In the commentary on draft Article 68, the Commission again made clear its meaning of the term "sovereign rights:"

> The Commission desired to avoid language lending itself to interpretations alien to an object which the Commission considers to be of decisive importance, namely, the safeguarding of the principle of the full freedom of the superjacent sea and the air space above it. Hence it was unwilling to accept the sovereignty of the coastal State over the seabed and subsoil of the continental shelf. On the other hand, the text as now adopted leaves no doubt that the rights conferred upon the coastal State cover all rights necessary for and connected with the exploration and exploitation of the natural resources of the continental shelf.[30]

At the Conference of the Law of the Sea, Article 68 was the subject of considerable debate in the Fourth Committee which was assigned the topic of the continental shelf. A number of states sought to convince the Committee to recognize the coastal state's sovereignty over its continental shelf, but a study of the summary records of the debate on this issue can leave little doubt that the real motive behind the move was an attempt to gain control over the resources of the superjacent waters.[31] Likewise, much of the opposition against the use of such terms as "sovereignty" and "sovereign rights" was a fear that these terms might be used as a basis for claiming jurisdiction over the superjacent waters and airspace.[32] Because of this fear, the United

States introduced a proposal to substitute the words "exclusive rights" for the Commission's term "sovereign rights" in draft Article 68. The Committee adopted the United States' proposal by a narrow vote of 21 to 20, with 27 abstentions.[33] Later, however, at the Plenary Session, after it had become clear that the term used to define the coastal state's authority over the continental shelf would have no affect on the status of the superjacent waters and airspace, the United States voted for the return of the term "sovereign rights," which was adopted by a vote of 51 to 14 with 6 abstentions.[34] Thus, Article 2 paragraph 1 of the Shelf Convention defined the rights of the coastal state over the continental shelf as "sovereign rights for the purpose of exploring it and exploiting its natural resources."

After considerable debate, the "natural resources" were defined in Article 2 paragraph 4 as "mineral and other non-living resources" and sedentary species of living organisms "which, at the harvestable stage, either are immobile . . . or are unable to move except in constant physical contact with the seabed or the subsoil."

The failure of the Shelf Convention to consider other possible uses of the continental shelf was dramatically demonstrated by the debate on a Bulgarian proposal introduced at the Conference which would have prohibited the coastal

state from constructing military bases on the continental shelf.[35] Mr. Belinsky, the Bulgarian representative, based his proposal in part on the theory that "the continental shelf should be used solely for the utilization of its natural resource and for no other purpose.[36]

In commenting on the proposal, Mr. Letts of Peru indicated that he did not believe the Bulgarian proposal was necessary, since "the coastal State exercised exclusive rights only for the purpose of exploring and exploiting the natural resources."[37] This comment led Mr. Munch of the Federal Republic of Germany to point out that since "all rights over the continental shelf other than those set forth in Article 68 were open to everyone, . . . any state could build installations on it."[38]

In view of these statements, India proposed an amendment to the Bulgarian proposal:

> The coastal State shall have the right and the obligation to prevent the continental shelf from being used for the purpose of building military bases or installations.[39]

This amendment would seem to suggest that India was not certain that the coastal state had the authority to prohibit other states from constructing military installations on its continental shelf without "a right additional to those set forth in Article 68."[40]

Later Bulgaria withdrew her proposal in favor of one introduced by India which provided:

> The continental shelf adjacent to any coastal State shall not be used by the Coastal State or any other State for the purpose of building military bases or installations.[41]

In commenting on the original Bulgarian proposal, Dr. Mouton of the Netherlands stated that "the fact that the coastal State did not exercise sovereign rights over the continental shelf, but only exclusive rights for the purpose of exploring and exploiting its natural resources, removed all possibilities of the threat which the proposal envisioned."[42] Later, however, in commenting on the Indian proposal, Dr. Mouton stated that since the International Law Commission had only considered "proposals relating to the exploration and exploitation of the natural resources," and had not considered the "many other possible ways of using the continental shelf," that "no such extraneous questions should be introduced into the work of the Conference."[43] Thus, Dr. Mouton seemed to have come to the realization that the coastal state might have rights to the continental shelf which were unrelated to the exploration and exploitation of natural resources, but that since they had not been considered by the Commission they should not be raised at this time. Several delegates seem to have agreed with Dr. Mouton on this point. Mr. Van der Essen of Belgium stated that the "Indian proposal was outside the Committee's terms of reference," and Miss Whiteman of the

United States felt that the Indian proposal went "far beyond the subject matter considered by the International Law Commission."[44]

Other delegates, however, had far different reasons for voting against the proposal. Mr. Obiols-Gomez of Guatemala stated that he would not vote for the proposal "since Guatemala had declared its sovereignty over its continental shelf, and could therefore not accept the restriction emboidied in the Indian proposal."[45] Mr. Lescure of Argentina stated that he could not vote for the proposal as it was now worded, but that if it were changed, so as to only prohibit other states, and not the coastal state, from constructing military installations on the shelf, he would vote for it, as it would then recognize the "coastal States's right of sovereignty" over its continental shelf.[46]

Subsequently the Indian proposal was defeated by a vote of 31 to 18, with 6 abstentions,[47] but the rejection of the proposal was based on a number of factors, and not upon any agreement among the delegates as to the nature and extent of the coastal state's authority over the continental shelf. Thus the Shelf Convention did not resolve the problem of the emerging uses.

## C. Subsequent Practice of the Coastal States

### 1. The North Sea Installations Act

The Netherlands had the distinction of being the first nation to have a radio and television station, Radio and T.V. Noordzee, operated off its coast from an artificial structure erected on its continental shelf. In early 1964, the Reclame Exploitatie Maatschappij, a limited liability company formed under Dutch law, advised the government that it intended to construct an artificial island on the continental shelf outside Dutch territorial waters, and to use the installation to transmit radio and television broadcasts into the Netherlands. The station began transmissions on July 29, 1964.[48]

There were two reasons for the company's disclosure of its intent. First, the company hoped to arouse public opinion against the government's monopoly on broadcasting. Under Dutch law there is a monopoly created in five broadcasting associations, "each of which represents an important religious or political faction of the population." These associations are financially supported by the government, and the law prohibits any commercial exploitation of radio or television. Second, the company believed that the government's failure to take any action against the ship-based Radio-Veronica, which had been operating off the Dutch coast

since 1959, precluded the government from taking any action against the operation of the station unless it changed its attitude with regard to the Veronica. The company was successful in obtaining public support, but it was wrong about the government being unable to take any action against it. Because of its shipping interests, and the doctrine of the freedom of the seas as it pertains to vessels, the government continued its lenient policy with regard to the Veronica, but on December 3, 1964, the Netherlands passed the North Sea Installations Act, which extended Dutch law to all fixed installations constructed on her continental shelf. On December 17, 1964, the police landed on the installation and put the transmitter out of operation. Warrants were issued against the operators and the broadcasting installation was impounded.[49]

The Dutch Legislature made it quite clear that it was not basing its claim to jurisdiction over all installations on the continental shelf on the wording of the Shelf Convention. Instead, it argued that there was no positive law on the subject and that unless someone assumed jurisdiction over these activities a "legal vacuum" would be created. The Legislature based the right of the coastal state to regulate these activities on three distinct considerations. First, if a "legal vacuum" were allowed to exist these installations

might quickly become breeding grounds for criminal and other undesirable activities. Second, both the coastal state and the world community have important interests in the shelf region which need to be protected, and third, the coastal state, because of its adjacency, has the most interests in the area and is in the best position to regulate them.[50]

It is clear that the coastal state does have an interest in broadcasting. There are only a limited number of frequencies available, and there is a need for some type of "traffic control." In addition, these transmissions, from whatever source they originate, have an effect within the territory of the coastal state, and there is a need to control their contents in order to prevent them from endangering the security, public order, mental health and good morals of the coastal state. There are also many other interests indirectly involved, such as the protection of copyrights, the payments of royalties, and the collection of taxes from profits.[51]

In addition to the interests of the coastal state, there are also inclusive interests of the world community which require the regulation of broadcasting. Frequencies are assigned by the International Telecommunications Union, and the use of unauthorized frequencies could have an adverse effect on sea and air navigation.[52]

While all of these factors suggest that the Netherlands did have a right to regulate broadcasting, the Act went far beyond this need and extended coastal authority to all installations on the shelf, for whatever purpose constructed, and whether erected by private individuals or foreign states.[53]

2. The Triumph Reef Case

Triumph Reef is a group of shallow coral formations composed of Triumph Reef, Pacific Reef, Ajax Reef, Long Reed, and an unnamed reef, which lie four and one-half miles off Elliot Key and ten miles off the Florida mainland some fifteen miles south and east of the densely populated area of Dade County Florida. These reefs have been shown on United States Coast and Geodectic charts since 1878.[54]

Some time in 1962, Mr. William Anderson "discovered" these reefs by conceiving the idea of occupying them through the construction of facilities for a "fishing club, marina, skin diving club, a hotel, and perhaps as the chief lure, a gambling casino." He gave notice of his claim, in late 1962 and early 1963, by means of newspaper advertisements. His "rights" were subsequently acquired by Atlantis Development Corporation, Ltd., a Bahamian corporation.[55]

Thereafter, Atlantis "patiently" sought to establish its legal position from various agencies of the State and

Federal Government of the United States. In reply to a letter to the State of Florida, Atlantis was advised that the reefs were "outside the Constitutional Boundaries of the State of Florida." Atlantis then turned to the Federal Government, and on September 14, 1962, the Department of Interior advised Atlantis that "the Department of Interior has no jurisdiction over land that is outside the territorial limits of the United States," and that "questions concerning such lands should be taken up with the Department of State." On November 9, 1962, the Department of State, through the Assistant Legal Advisor, informed Atlantis that "the areas in question are outside the jurisdiction of the United States and constitute a part of the high seas," and that as such "are open to all nations and no state may validly subject any part of them to its sovereignty."[56]

On the basis of this information, Atlantis spent approximately $50,000 for tests, surveys, experiments, and the construction of four prefabricated buildings, three of which were distroyed by a hurrican in September 1963. It was Atlantis' intent to eventually create an independent island nation on a 2,600 acre artifical island constructed on the reefs. The plans included the construction of a radio and television station, a post office and other government buildings, an international bank where people could bank by number

as they do in Switzerland, and a gambling casino. The total cost of the project was estimated at $250 million, and the value of the land, based on land values in Miami Beach and Las Vegas, was estimated at over a billion dollars.[57]

On October 24, 1963, the District Engineer, Corps of Engineers, Jacksonville, Florida, sent a letter to Atlantis advising it that a permit was required by law before any construction could be begun on the reefs. Atlantis removed the one remaining building, and in November of 1963, sent a letter to the Corps of Engineers requesting it to reconsider its position. On or about October 5, 1964, the Office of the Chief of Engineers, Washington, D. C., replied that a permit would still be required for any construction on the reefs. Atlantis never applied for the permit.[58]

On November 16, 1964, Acme General Contractors, Inc., a Florida corporation, through its President, Mr. Louis M. Ray, applied to the Corps of Engineers for a permit to begin construction on the reefs. The purpose of the construction as stated in the letter was to be the creation of a resort area.[59] However, there is some evidence to indicate that he actually intended to create a sovereign island nation, the Grand Capri Republic.[60]

Upon learning of the request for a permit by Acme, Atlantis filed a written objection to the Corps of Engineers

on December 31, 1964, asserting its claims to ownership of the reefs. No action was taken on the objection, but the Corps of Engineers denied Acme's request for a permit. In March 1965, Acme proceeded to dredge and fill three circular island formations, two on Triumph Reef and one on Long Reef. In April 1965, the United States sought an injunction from the United States District Court in Florida to prevent any further construction on the reefs. On April 16, Atlantis filed a motion to intervene, which was denied, and on April 21, the court granted a preliminary injunction.[61]

Before beginning any discussion of the trial on the merits, it might be useful to first examine the Outer Continental Shelf Lands Act[62] (hereinafter referred to as the Shelf Act). The Act was very poorly drafted, and created many of the problems in the case. Section 3(a) states:

> It is declared to be the policy of the United States that the subsoil and seabed of the outer Continental Shelf appertains to the United States and are subject to its jurisdiction, control, and power of disposition as provided in this subchapter.[63]

The language of this section is very broad and seems to give the United States jurisdiction and control over the subsoil and seabed itself and not merely rights to the natural resources. Griffin argues that this language was no accident, and cites the Senate Report on the bill to show that the committee actually intended to extend jurisdiction over the subsoil and seabed of the outer continental shelf.[64]

Yet Section 4(a)(1) provides that:

> The Constitution and laws and civil and political jurisdiction of the United States are hereby extended to the subsoil and seabed of the outer Continental Shelf and to all artificial islands and fixed structures which may be erected thereon for the purpose of exploring for, developing, removing, and transporting resources therefrom.[65]

The wording of this section seems to raise a question as to what law, if any, would apply to installations and fixed structures erected for purposes unrelated to the exploration for or exploitation of natural resources.

Section 4(b) adds a jurisdictional mystery by stating that:

> The United States district courts shall have original jurisdiction of cases and controversies arising out of or in connection with any operations conducted on the outer Continental Shelf for the purpose of exploring for, developing, removing or transporting by pipeline the natural resources, or involving rights to the natural resources of the subsoil and seabed of the outer Continental Shelf.[66]

The wording of this section raises the question of what court, if any, has jurisdiction over activities not involving natural resources. Perhaps part of the mystery can be explained by the fact that the Act was primarily concerned with the exploration for and exploitation of mineral resources, and only provides the Secretary of the Interior with the authority to grant leases for the exploration of oil, natural gas, sulphur and other minerals, and no agency of the Federal

Government has been given the authority to authorize other uses of the outer continental shelf.[67] Therefore, since the Act only authorizes activities relating to the exploration and exploitation of mineral resources, it was unnecessary to make provisions for the regulation or control of other activities.

Finally, Section 4(f) provides that:

> The authority of the Secretary of the Army to prevent obstructions to navigation in the navigable waters of the United States is hereby extended to artificial islands and fixed structures located on the outer Continental Shelf.[68]

The wording of this section does not seem to limit the authority of the Secretary of the Army to installations erected for "the purpose of exploring for, developing, removing, and transporting resources." Also, the authority referred to in this section is that granted to the Secretary of the Army under Section 10 of the River and Harbors Act of 1899, which prohibits the erection of any obstruction to navigation.[69] Griffin points out that this section was "added by the same Senate Committee which amended the bill to extend dominion over the whole substance of the shelf rather than just natural resources," and that to limit the authority of the Secretary of the Army to structures relating to natural resources would produce the anomaly that he could regulate structures erected for lawful purposes, but would be powerless

to prevent the construction of installations for illegal or unauthorized purposes.[70]

Now that we have examined the problems created by the wording of the Shelf Act, we can look at the court's treatment of the problems. In granting the preliminary injunction the court was very vague about the basis of its jurisdiction. It found that the defendants' activities would destroy these reefs, which were "unique and rare in this part of the world," that "this entire coral reef is a sensitive living thing which has taken nature, through its patience and exquisite care, countless centuries to develop," and that the "entire reef formation stands as a sentry against the sea and protects the grass beds where many varieties of fish feed."[71] Thus the court seemed to be saying that the activity involves "rights to the natural resources."

On the appeal by Atlantis on the question of its right to intervene, the Court of Appeals, in reversing the decision of the lower court, raised two important questions in dicta: does the Shelf Act give the United States jurisdiction over the shelf for purposes unrelated to "exploring for, developing, removing, and transporting resources therefrom;" and does the authority of the Secretary of the Army to prevent obstructions to navigation extend to "artificial islands and fixed structures" erected on the shelf for purposes unrelated to natural resources.[72]

At the subsequent trial on the merits the lower court avoided directly answering these questions. The court solved the jurisdictional problem by finding that the coral reefs were "rare and priceless natural resources of this nation," noting that prior to its decision Congress had enacted the Biscayne National Monument Bill, which placed both Triumph and Long Reefs with the boundaries of the Monument. Thus the court found as a matter of law that the proposed construction would "constitute 'artificial islands and fixed structures . . . erected . . . for the purpose of . . . developing' the reefs."[73]

On the permit issue the court found that the "reef area is extensively navigated (emphasis added)." Regardless, however, of whether the waters over the reefs were actually navigable, courts have long held waters to be navigable, even when in fact they are not.[74]

A new issue was raised at the trial when the Government, as an additional basis for its cause of action, contended that any construction on the continental shelf without authority constituted a trespass on Government land. This argument raised a key issue as to the actual nature of the United States' proprietary interest in the continental shelf. In answering the issue, the court took a long look at the history of the United States' shelf claims. The court noted

that the Submerged Lands Act, whereby the Federal Government relinquished all rights to the submerged lands beneath the territorial waters to State authority, used the term "title to and ownership of the lands,"[75] while the Shelf Act used the term "jurisdiction, control, and power of disposition,"[76] indicating that the nature of the authority claimed over the areas was different. Thus the court found that the interest claimed by the United States over the outer continental shelf was something less than fee simple, and would not support an action for trespass quare clausum fregit.[77] The court did not elaborate on the nature of the United States' proprietary interest except to comment:

> Whatever proprietary interest exists with respect to these reefs belongs to the United States under both national (Shelf Act) and international (Shelf Convention) law. Although this interest may be limited, it is nevertheless the only interest recognized by law, and such interest in the United States precludes the claims of the defendants and intervenor.[78]

By deciding the case on the ground that the activities involved the natural resources, the court avoided the problem of determining what right, if any, the United States has to exercise authority over the continental shelf for purposes other than the exploration and exploitation of its natural resources. It is clear, however, that the case involved more than just the destruction of natural resources. In the words of the court:

> If these reefs were available for private construction totally outside the control of the United States Government, they could conceivably support not only artificial islands and unpoliced gambling casinos, but even an alien missile base, all within a short distance of the Florida Coast.[79]

## D. Trends in Decision

The subsequent practice of the coastal states would seem to suggest that they do not consider their interests in the continental shelf limited to exploring it and exploiting its natural resources. One writer recently summed up the practice of the coastal states in the following manner:

> . . . [I]t seems that the state practice is moving in the direction of a new rule of law that a coastal state may exercise plenary jurisdiction and control over the adjacent sea bottom and installations thereon for all purposes without using the label "sovereignty."[80]

Likewise, many of the suggestions made for proposed uses of the continental shelf seem to assume that the coastal state does have interests in the shelf unrelated to exploration and exploitation. The Commission on Marine Science, Engineering and Resources has recently recommended that studies be made for the development of offshore terminals, storage facilities and nuclear power plants, and that efforts be made to strengthen activities related to acquaculture.[81] Also, one writer has suggested that:

> In the interest of a more adequate enjoyment by the public of the outer Continental Shelf, it is proposed that a U.S. executive agency . . . be given authority

> by Congress to lease certain areas of /the/ outer Continental Shelf to private legal persons . . . for their exclusive use for purposes of building structures thereon which will be utilized for such undertakings as (1) "sealabs" or underwater laboratories, (2) fish farms or marine biological experimental stations, (3) bona fide recreational centers, or (4) gas stations or similar such offshore service centers for sport fishermen and motor boat yachtsmen.[82]

## E. Appraisal and Recommendation

It is obvious that the proximity of the continental shelf to the coastal state's territorial base of power creates a danger to its security. The Truman Proclamation stated that "self-protection compels the coastal nation to keep close watch over activities off its shores which are of a nature necessary for the utilization of these resources." While the Proclamation was only concerned with activities associated with the exploitation of the natural resources, it would seem that the existence of pirate broadcasting stations, gambling casinos, and alien missile bases would pose even more of a threat to the security of the coastal state. As Professors McDougal and Burke point out:

> It would be wholly fanciful to expect that a coastal state would feel bound to stand aside while another, possibly hostile, state erected military facilities appearing above the surface or wholly submerged in the ocean areas adjacent to its coast.[83]

To admit that the coastal state has other interests in the shelf region, is not, however, to suggest that the coastal

state should be given "sovereignty" over its continental shelf. We should not be willing to assume that all coastal interests are important enough to warrant the limitation or restriction of inclusive interests, or that all inclusive uses of the continental shelf will have an adverse effect upon important coastal interests. To grant the coastal state a complete comprehensive competence over the continental shelf under the label of "sovereignty" to protect certain of its important interests seems entirely unnecessary. The concept of the contiguous zone would seem to be a much more rational means of accomplishing this objective without destroying all the inclusive interests of the world community.

The true function of the contiguous zone is to recognize a limited competence of the coastal state to regulate activities beyond the limits of the territorial sea which have a unique impact upon important coastal interests, without recognizing all the comprehensive competence associated with sovereignty.[84]

In the eighteenth century, England, the champion of the freedom of the seas, passed the first of a series of "Hovering Acts," which extended British jurisdiction over foreign vessels engaged in smuggling as far as 100 leagues from her coast.[85] Similarly, in 1804, Chief Justice Marshall, in the famous case of Church v. Hubbart, recognized Portugal's right to

exercise jurisdiction over American vessels on the contiguous high seas to protect her commercial interests in the colony of Brazil.[86]

The past practice of coastal states clearly establishes that the concept of the contiguous zone has been used to protect and promote a variety of interests, under entirely different circumstances, and at various distances from the shore.[87] As Professors McDougal and Burke point out:

> State practice firmly establishes that the widths states may claim for contiguous zones are to be determined primarily by the requirements of securing protection of the particular interests. Such requirements observably vary through time and with the interests at stake, changing both with the emergence of new interests requiring new measures of protection and with the conditions under which more traditional interests must be secured.[88]

Recently, there has been an attempt to restrict the concept to the protection of certain stated interests at a fixed distance from the shore. An example of this rigid conception of the doctrine of the contiguous zone can be seen in the treatment of the concept in the 1958 Geneva Conference on the Law of the Sea. Article 24 of the Convention on the Territorial Sea and the Contiguous Zone[89] Hereinafter referred to as the Territorial Sea Convention) establishes a single contiguous zone twelve miles in width as measured from the baseline for the territorial sea, for the limited purpose of protecting custom, fiscal, immigration or sanitary

regulations. This attempt to create a single zone completely ignores the fact that it is the importance of the interest sought to be protected and not the distance from shore at which the power is exercised which is the controlling factor:

> It would serve no useful purpose to attempt to state what is adjacent in terms of miles. . . . The distance from shore at which these powers may be exercised is determined not by milage but by the necessity of the littoral state and by the connection between the interests of its territory and the act performed on the high seas.[90]

Similarly, Dr. Masterson states:

> The laws passed to protect or regulate these various interests, or claims, involve different considerations, and they have, therefore, developed along different lines; laws securing or regulating a particular interest have been evolved from factors peculiar to such interests. They, thus, necessarily present distinct questions, and should therefore, be delt with separately in a study of the law pertaining to jurisdiction in the littoral seas. The attempt within recent years, on the part of some writers, judges, and governments, to fix a single zone beyond which the application or enforcement of them all is forbidden, thus treating them as a single problem, has cast this extremely difficult subject into hopeless confusion, and has littered the juristic literature on the subject with careless assertion.[91]

Likewise, the restrictions on the type of interests which the coastal state may seek to protect is not in conformity with the actual practices of states.[92] In 1966, the United States joined a long list of nations claiming jurisdiction and control over fisheries beyond the limits of the territorial sea,[93] even though the right to establish "fisheries zones" is not provided for by the Territorial Sea Convention. But as one writer commented:

> The legality of these contiguous fisheries zones depends on customary law developed through the practice of states and not on any express provisions of the 1958 Geneva Conventions.[94]

It is also clear that many writers do not understand the true function of the concept of the contiguous zone. Perhaps the worst example is the treatment of the concept by Dr. Colombos. In denying the validity of the doctrine of the contiguous zone Dr. Colombos states:

> The adoption of a contiguous zone in which only certain territorial rights may be exercised would further increase these difficulties /of the distinction between the regime of the high seas and that of the territorial seas/, as it would superimpose on the present distinction between the high seas and the territorial waters an additional distinction between the proposed contiguous zone and the territorial waters. The fact that these different regimes would be applicable in respect of waters which are essentially the same, since they all form part of the sea, would inevitably lead to serious legal complications which appear to be both dangerous and difficult of application. It would also impose a burden on the coastal State in respect of the effective maintenance of patrol service for the enforcement of its custom, fiscal and safety regulations.[95]

Dr. Colombos' suggestion that waters should be governed by the same legal regime because "they all form part of the sea," is somewhat amazing. It is like suggesting that the continent of Europe should be governed by a single legal-political regime because it all forms part of a single land mass. Also, the argument that the establishment of a contiguous zone would place too much of a burden on the enforcement powers of the coastal state overlooks the fact that the

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establishment of such a zone is a right and not a duty. If the coastal state felt that the creation of such a zone would place too much of a burden on its enforcement services, it would simply not establish one. Thus Dr. Colombos' reasons for rejecting the concept of the contiguous zone do not appear to be valid.

More important, however, Dr. Colombos does not appear to understand the true function of the contiguous zone. He constantly refers to it as an "extension of territorial waters."[96] In discussing the limited contiguous zone approved in the Territorial Seas Convention Dr. Colombos states:

> It is doubtful how far these rules /establishing the limited contiguous zone/ may prove acceptable to the British and United States Governments. . . . As already stated, these Governments do not recognize any extension of territorial waters beyond three miles unless they are parties to an international or bilateral agreement (emphasis added).[97]

Also, Dr. Colombos fails to realize that fisheries zones are merely another type of contiguous zone. Thus he treats them entirely separate:

> There exists, however, no valid reason for treating the question of the traditional three-mile zone of territorial waters on the same basis as the extension of these waters for fishery protection, as the two matters are quite separate. A minimum limit of territorial waters appears as necessary today as in the days of Grotius, but the necessity of safeguarding the food resources of the sea to meet the ever-expanding increase of of the world's population requires a totally different approach.[98]

Dr. Colombos' refusal to recognize the concept of the contiguous zone because of his desire to see the authority of the coastal state limited to a narrow three-mile territorial sea, is actually encouraging the thing which he most fears. By refusing to recognize any competence of the coastal state beyond the limits of the territorial sea, the coastal state will be forced to seek a wide territorial sea to protect its interests. This is precisely what happened in the North Sea Installations Act case. The Netherlands did not believe that it had the authority under existing international law to prohibit pirate broadcasting beyond the limits of its territorial sea, and so it made a comprehensive claim to competence over the continental shelf in order to protect this limited interest. As Professors McDougal and Burke warn:

> One who snaps at the minnow of a limited, occasional, exclusive authority in a contiguous zone must, apparently, perforce swallow the whale of a comprehensive, continuing, exclusive competence in such zone.[99]

It is important to remember the recognition of the exclusive right of the coastal state to exploit the natural resources of the contiguous submarine areas outside the coastal state's territorial sea, is merely another example of the world community recognizing a limited competence of the coastal state under the concept of the contiguous zone. Thus in reality the doctrine of the continental shelf is merely another example of the flexibility of the concept of the contiguous zone.[100]

This failure on the part of some decision-makers to realize the true juridical basis of the doctrine on the continental shelf could lead to serious problems. The International Court of Justice, in an opinion of February 20, 1969, on the question of the delimitation of the boundaries of the continental shelf of the North Sea as it pertains to the Federal Republic of Germany, the Netherlands, and Denmark, seemingly in dicta, stated:

> Submarine areas do not really appertain to the coastal State because--or not only because--they are near it. They are near it of course; but this would not be suffice to confer title, any more than, according to a well-established principle of law recognized by both sides in the present case, mere proximity confers per se title to land territory. What confers the ipso jure title which international law attributes to the coastal State in respect of its continental shelf, is the fact that the submerged areas concerned may be deemed to be actually part of the territory over which the coastal State already has dominion, --in the sense that, although covered with water, they are a prolongation or continuation of that territory, an extention of it under the sea.[101]

The opinion of the court is rather shocking in view of all the care which the drafters of the Shelf Convention took to avoid the recognition of coastal state "sovereignty" over the continental shelf. The court's recognition of "sovereignty" over the shelf also raises a problem with regard to the status of the superjacent waters. Recently Ambassador Pardo of Malta stated:

> It is a traditional principle of international law that a State exercising sovereignty over land also exercises jurisdiction over the superjacent atmosphere up to the still undefined limits of outer space, but the sea is the atmosphere of the ocean floor, hence a State exercising sovereignty over an area of the ocean floor also has a claim to jurisdiction over the superjacent sea despite the wording of article 3 of the 1958 Geneva Convention /Shelf Convention/.[102]

It is not too surprising, therefore, that Judge Fauad Ammoun, in a separate opinion, came to the conclusion that the epicontinental sea was a supplementary and inseparable concept of the doctrine of the continental shelf.[103]

In a dissenting opinion, Judge Tanaka, seems to have realized the true basis of the doctrine:

> As to the idea and the fundamental principle which govern the continental shelf as a legal institution, it is evidently the realization of harmony between the two interests: the one the interest of individual coastal States for exploration of their continental shelves and exploitation of natural resources; the other the interests of the international community, particularly the safeguarding of the freedom of the high seas.[104]

Thus Judge Tanaka realized that the recognition of the coastal state's right to explore the shelf and to exploit its natural resources must be balanced with the inclusive interests of the world community. The majority view that it was a geological consideration which led to the creation of the doctrine of the continental shelf ignores the fact that the Shelf Convention sought to protect and balance both sets of interests. The recognition of coastal state "sovereignty" over the

continental shelf could give rise to comprehensive claims to authority over the superjacent waters and airspace, thereby destroying the inclusive interests of the world community. It is unbelievable that the majority of the court could have arrived at a decision so disruptive in its impact upon the common interests of the world community.

## III. THE DELIMITATION OF THE AREA OF COASTAL AUTHORITY

### A. The Geological Continental Shelf

Before beginning any discussion of the claims to delimit the area of the juridical continental shelf, it may be useful to examine the geological concept of the continental shelf. In very basic geological terms, every continent rest on a submarine platform or base, which slopes gently seaward from the law-water mark to a point where a substantial break in grade occurs, at which point the terrain slopes steeply seaward until the great ocean depths are reached. This gently sloping base is known as the "continental shelf," and the steeply sloping area is called the "continental slope." Sometimes there is an apron of sediments at the base of the continental slope, which slopes very gently seaward until it merges with the deep ocean floor. This apron of sediments is known as the "continental rise."[105]

Like the surface of the land above the water, the continental shelf is often uneven and irregular. In fact, the shelf area between Maine, Nova Scotia and Newfoundland is actually a submerged extension of the Appalachin Mountains

system. Even at the edge of the shelf the depth varies from less than 100 meters to more than 300 meters, and although the depth has traditionally been considered to be 100 fathoms (200 meters), the actual average depth is 133 meters. The width of the shelf also varies substantially throughout the world, and in the United States alone, the width varies from less than one nautical mile off parts of the California coast to 250 miles off the coast of New England.[106]

If we think of the continental shelf as the area lying between the shore and the first substantial "fall-off," then many of the adjacent submarine areas are excluded from the definition. Along the entire Pacific coast of South America the first substantial fall-off occurs very near the shore, while in the Persian Gulf there is no substantial change in the slope of the floor and the water never reaches a depth of 600 feet. Also, there are often deep trenches separating parts of the continental shelf, which could be considered the first substantial fall-off, and along the coast of Southern California the floor is a checkerboard of basins, banks, and islands, resulting in the use of the term "continental boarderland" to describe the floor rather than the term "continental shelf."[107]

## B. Areas Claimed under the Unilateral Proclamations

It is interesting to note that the Treaty of Paria used the words "submarine areas of the Gulf of Paria" to delimit the area over which the parties claimed exclusive control, since the Gulf of Paria is not part of a geological continental shelf. It was the Truman Proclamation which first used the term "continental shelf" in a juridical context. While the Proclamation did not define the term, the press release which accompanied it stated that the continental shelf was considered to be the submerged land contiguous to the continent which was covered by not more than 100 fathoms (600 feet) of water.[108]

Many of the subsequent unilateral instruments continued to use the term "continental shelf" to delimit the area of exclusive authority, but a study of these instruments reveals that the extent of the areas claimed varied considerably.

Some of the instruments defined the shelf in terms of the depth of the superjacent waters. Mexico, for example, defined the shelf as the land "covered by sea water up to two hundred meters of depth at the level of the low tide."[109]

Other instruments, particularly those issued by states with little or no shallow submerged areas, defined the area of exclusive control in terms of a fixed distance from the shore. Chile, for example, claimed exclusive control over an

area within a line 200 marine miles distance from and parallel to its coast.[110] Still others, such as that of Argentina, did not define the term at all, thus leaving uncertainty as to the actual nature and extent of the claim.[111]

## C. History of Article One of the Shelf Convention

From the very beginning of its study of the juridical doctrine of the continental shelf, the International Law Commission rejected the idea that the area of exclusive control must depend upon the existence of a geological continental shelf. Instead, it sought to provide for those shallow areas which were not part of any geological shelf by defining the area in terms of the ability to exploit its natural resources.[112] In 1951, the exploitability test was incorporated into the Commission's first draft articles:

> As here used, the term "continental shelf" refers to the sea-bed and subsoil of the submarine areas contiguous to the coasts, but outside the territorial waters, where the depth of the superjacent waters admits the exploitation of the natural resources of the sea-bed and subsoil.[113]

In 1953, the criticism of the "exploitability test" led the Commission to adopt a depth test of 200 meters to delimit the area of exclusive control.[114]

In 1956, a Specialized Conference of the Organization of American States met in Ciudad Trujillo, and the

representatives of twenty-one American states adopted a resolution which defined the continental shelf as the seabed and subsoil of the adjacent submarine areas "to a depth of 200 meters or, beyond that limit, to where the depth of the superjacent waters admits the exploitation of the natural resources."[115] Using this resolution as the basis of his argument, Dr. Garcia-Amador, the Chairman at the Commission's Eighth Session in 1956, proposed that the Commission adopt the Ciudad Trujillo "exploitability test." He argued that this would give those states with no shallow submerged areas "equal in theory" treatment with the other states. The Commission finally adopted the exploitability test, although it seems that the major reason for the Commission's adoption of this criterion was the belief that a delimitation of the area in terms of the depth of the superjacent waters might prohibit or discourage exploitation beyond this depth, and might be difficult to change when technology made exploitation beyond this depth possible.[116] The 1956 draft Article 67 read:

> For the purpose of these articles, the term "continental shelf is used as referring to the seabed and subsoil of the submarine areas contiguous to the coast but outside the area of the territorial sea, to a depth of 200 meters (approximately 100 fathoms), or, beyond that limit, to where the depth of the superjacent waters admits of the exploitation of the natural resources of the said area.[117]

Except for the addition of a clause providing that the definition would include submarine areas adjacent to islands, the Conference adopted the draft article as Article 1 of the Shelf Convention.[118]

There has been considerable disagreement as to the actual area delimited by Article 1 because of the vagueness of the exploitability test. Dr. Oda of Japan argues that the clear and unambiguous language of Article 1 has divided the whole of the ocean floor among the coastal states.[119] He basis this argument on the theory that the phrase "or, beyond that limit, to where the depth of the superjacent waters admits of the exploitation of the natural resources," will enable the coastal state, as its technological capabilities develop, to extend its jurisdiction seaward up to the midway point between it and the coastal state on the opposite side. The problem with Dr. Oda's theory is that it assumes that the wording of Article 1 is clear and unambiguous. In reality, words are merely "shadows on paper," and have no "normal" or "ordinary" meaning except in the total context in which they are used. Instead of mechanically searching for some pre-existing meaning of the words under the "clear meaning rule," the decision-maker must seek to discover the true expectations of the drafters and the objectives or values which they sought to promote or protect. Under this "general purpose rule,"

the decision-maker is provided with a methodology which will enable him to give a meaning to the words which, under the principle of efficacy, will serve the general purpose intended by the drafters. Only then can the document accomplish the purpose which it was intended to serve.[120] The Harvard Research Draft Convention on the Law of Treaties lists some of the factors which are relevant to the problem of determining the general purpose of the document:

> The historical background of the treaty, the travaux preparatoires, the circumstances of the parties at the time the treaty was entered into, the change in these circumstances sought to be effected, the subsequent conduct of the parties in applying the provisions of the treaty, and the conditions prevailing at the time interpretation is being made, are to be considered in connection with the general purpose which the treaty is intended to serve.[121]

When we apply the "general purpose rule" to the language of Article 1, it becomes clear that the drafters did not intend to include the whole of the ocean floor within the definition of the continental shelf. The legislative history shows that the exploitability test was adopted in order to give "equal in theory" treatment to those states with little or no shallow submerged areas, to encourage exploitation beyond the depth of 200 meters, and to prevent the need of frequent revision to keep pace with advances in technology. Also, the drafters could not foresee the rapid advances in technology which would take place in the immediate future. The Conference had before it a document which represented

"the latest technical information concerning the possibility of exploiting the mineral resources of the subsoil," and which predicted that the 200 metres," and "adjacent," all of which show an intent to delimit the area of exclusive authority. The importance which the Commission gave to these terms can be seen in the Commentary on the 1956 draft articles. In explaining the importance of the term "200 metres," the Commission stated:

> It seemed likely that a limit fixed at a point where the sea covering the continental shelf reaches a depth of 200 metres would at present be sufficient for all practical needs. This depth also coincides with that at which the continental shelf in the geological sense generally comes to an end and the continental slope begins. . . . The Commission felt, however, that such a limit would have the disadvantage of instability. Technical developments in the near future might make it possible to exploit the resources of the seabed at a depth of over 200 metres. Moreover, the continental shelf might well include submarine areas lying at a depth of over 200 metres.[123]

In commenting on the retention of the term "continental shelf" to delimit the area rather than the use of some other term such as "submarine areas," the Commission noted that it "decided to retain the term 'continental shelf' because it is in current use and because the term 'submarine areas' used without further explanation would not give a sufficient indication of the nature of the area in question."[124] The Commission also gave importance to the concept of "contiguity" and the use of the term adjacent:

> Neither is it possible to disregard the geographical phenomenon whatever the term--propinquity, contiguity, geographical continuity, appurtenance or identity--used to define the relationship between the submarine areas in question and the adjacent nonsubmerged land.[125]

Thus the Shelf Convention was only concerned with the adjacent submerged lands, although the precise delimitation of the area is uncertain.

The argument that the "exploitability test" would allow the coastal state to extend its jurisdiction seaward to the midway point between it and the opposite or adjacent coastal state ignores the limiting words of the Shelf Convention and the intent of the drafters, but just as important, such an interpretation would be unacceptable to the world community. As Ambassador Pardo of Malta points out:

> In all probability . . . a division which would give small islands, such as Clipperton and St. Helena, sovereign rights over millions of square miles of valuable ocean floor would not be generally acceptable to the international community. . . .
>
> . . . /I7t would operate to the disadvantage not only of landlocked countries but also of countries, that do not possess the requisite technology or financial resources for development of their share of the ocean floor or that are, as the Soviet Union, in a disadvantageous geographical position. It is highly unlikely that a division of the ocean floor among coastal states would be easily accepted by the international community. Instead the consequences of this approach are likely to be a sharp rise in world tension.[126]

D. Subsequent Practice of the Coastal States

While the legislative history of the Shelf Convention indicates that the drafters envisioned a "narrow" shelf, the subsequent practice of the coastal states suggests that the "exploitability test" has been used to extend coastal authority seaward far beyond these limits.

The extent of the United States' claims can be seen from a statement by Charles F. Luce, Under Secretary of the Department of the Interior, in an address before the American Bar Association on June 8, 1967:

> The United States has taken action consistent with a claim of sovereign rights to the seabed and subfloor some distance from its coasts, by the granting of a phosphate lease some 40 miles from the California Coast in the Forty-mile Bank area in 240 to 4,000 feet of water; by granting of oil and gas leases some 30 miles off the Oregon coast in about 1,500 feet of water; and in the threatened litigation against creation of a new island by private parties on Cortes Bank about 50 miles from San Clemente Island off the coast of California or about 100 miles from the mainland. Each of the California areas is separated from the coast by troughs as much as 4,000 to 5,000 feet deep. The Department of the Interior has published OCS leasing maps indicating an intent to assume jurisdiction over the ocean bottoms as far as 100 miles off the Southern California coast in water depths as great as 6000 feet.[127]

Off the Atlantic coast the United States has issued permits for exploratory drilling in areas with depths of from 4000 to 5000 feet, and in the Gulf of Mexico permits have been issued in areas with depths of 1100 meters, more than 100 miles from the shore.[128]

Other states have made similar and in some cases even more extensive claims. Australia has issued exploration permits for areas as far as 200 miles from the coast, and Honduras and Nicaragua have issued licenses in areas as far as 225 miles from their shores.[129]

Not all claims to jurisdiction and control, however, have involved the exploration for and exploitation of the natural resources. Recently two attempts were made to establish independent island nations on the Cortes Bank some 110 miles west of San Diego, California. In both instances the United States responded to the threatened construction of these islands claiming the Cortes Bank as part of the outer continental shelf.

In November 1966 a group of San Diego businessmen decided to build an artificial island on the Cortes Bank, and to establish an independent island nation of Abalonia. They planned to build a tax free processing plant on the island and to harvest abalone and lobsters from the rich and virtually unfished waters.[130]

The entrepreneurs obtained a 366 foot World War II surplus troop ship, the S.S. Jalisco, reinformced it with concrete, towed it to the bank, moored it and opened the sea cocks, intending to sink it in two fathoms of water as a foundation for the island. Unfortunately, rough seas broke

one of the mooring lines and the ship was dragged into deeper waters where it eventually sank. The United States Government has advised the businessmen that any further attempts to resume construction on the bank will result in prosecution for the creation of an obstruction to navigation.[131] One could argue that the use of the island as a tax free processing plant involves rights to the natural resources, but the actual construction of the island itself, which is what the government was objecting to, has nothing to do with natural resources.

On November 23, 1966, a Seattle law firm, representing the promoters of a venture to build a new island nation of Taluga on the Cortes Bank, mailed a notice of Intent to the Los Angeles office of the Coast and Geodetic Survey. The notice contained twenty-three pages of text, supplementary sketches, diagrams, charts, engineering data and financial statements, explaining how the islands were to be built. Taluga was to consist of four islands connected by bridges, and would take fourteen years to construct by means of some 473,000 tons of rock carried from Mexico aboard barges at a cost of some $13 million, and would have a total area of 973 acres. The Island of Taluga, Isla Nova De Edward Maria De Sarro would be a sovereign nation and would claim a twelve mile territorial sea. It would have friendly relations with the United States, but it had not yet decided whether or not it would join the United Nations.[132]

On November 29, 1966, the Corps of Engineers sent a letter to the Seattle attorneys representing the promoters, advising them that the Cortes Bank was a part of the outer continental shelf and that any construction on the bank would be unlawful without a permit from the Secretary of the Army.[133]

The location of the Cortes Bank raises some serious questions with regard to the United States' claim that it is a part of the outer continental shelf. The bank lies some 110 miles off the California mainland and some fifty miles seaward of San Clemente Island. The waters between the mainland and San Clemente Island reach depths of 1200 meters, and the waters between San Clemente and the bank reach depths of 1400 meters.[134]

One could argue that the deep waters are merely "trenches" in the shelf, but the International Law Commission's Commentary on draft Article 67 states:

> In the special cases in which submerged areas of a depth of less than 200 metres, situated fairly close to the coast, are separated from the part of the continental shelf adjacent to the coast by a narrow channel deeper than 200 metres, such shallow areas could be considered as adjacent to that part of the shelf.[135]

In this case, however, the submerged areas are not "fairly close to the coast," nor are the deep waters a "narrow channel." The topography of the ocean floor off the

coast of Southern California does not at all resemble a geological continental shelf,[135] and it is doubtful that 110 miles can be considered to be adjacent. Yet in December 1966, the Department of the Interior published leasing maps showing Cortes Bank as part of the outer continental shelf, and subsequently granted exploratory leases in the area.[137] Thus it would appear that the United States actually does consider the bank as part of the continental shelf, and was not merely extending its jurisdiction seaward to prevent the threatened construction of the islands.

## E. Trends in Decision

The subsequent practice of the coastal states would seem to suggest that the exploitability test has been used to extend the area of exclusive coastal authority seaward far beyond the limits of the continental shelf as envisioned by the drafters of the Shelf Convention. The uncertainty created by the existing definition of the continental shelf has led to a number of proposals for a more precise delimitation of the area.[138] Closely related to this problem, and to some degree inseperable from it, are the proposals for the establishment of a legal regime for the exploration and exploitation of the mineral resources of the deep ocean floor beyond the area of exclusive coastal authority. It is clear that before any regime can be established for the deep ocean floor there must

be a precise delimitation of the area of coastal authority, and that the coastal states are not going to be willing to "give up" any rights which they now have under the exploitability test unless they are satisfied that their interests will be protected under the proposed regime for the deep ocean floor.[139]

Much of the interest for the establishment of a legal regime for the deep ocean floor has been created by the fear of the underdeveloped nations that technology will soon make it possible for the developed nations to exploit the resources of the deep ocean floor. By creating an international regime the underdeveloped nations hope to insure that they will obtain some economic benefit from the exploitation of these resources. In August 1967, Malta introduced a proposal before the twenty-second session of the General Assembly calling for the consideration of a treaty to place the mineral resources of the deep ocean floor under the jurisdiction of an international agency, with the economic benefits derived from any exploitation to be used for the benefit of the less developed nations.[140]

Some writers seem to assume that because the underdeveloped nations are seeking an international regime for the deep ocean floor that they are in favor of a narrow shelf. This is not necessarily true. At the 1958 Geneva Conference

the vast majority of the underdeveloped nations were opposed to the use of the 200 meters depth test to delimit the area of exclusive coastal authority,[141] and some of the most radical claims to authority over the continental shelf have been made by the underdeveloped nations. A narrow shelf would only be advantageous to the landlocked nations and those nations in an unfavorable geographical position, or which have no prospects for mineral deposits in the submerged areas contiguous to their coasts. What the underdeveloped nations seek to obtain is an economic benefit from the exploitation of resources beyond the area of exclusive coastal authority by the technologically advanced nations, which they would not obtain under existing law.

The proposals for a precise delimitation of the continental shelf are as varied as they are numerous, but they can roughly be divided into two groups, those favoring a "wide" shelf and those favoring a "narrow" shelf. Recently, the National Petroleum Council came out in favor of a wide continental shelf. The Council argued that it was in the vital interest of the United States to retain control over the resources of the entire "continental margin," which would include the shelf, the continental slope, and the landward portion of the continental rise. The Council also based its recommendation on the wording of the Shelf Convention and

the subsequent practice of the coastal states, both of which suggested that "the most natural and appropriate outward limit of the country's sovereign rights" would be the natural boundaries between the submerged continent and the oceanic areas.[142] Lastly, the Council argued that the establishment of a narrow shelf would result in the loss of billions of dollars to the Federal treasury in taxes, bonuses, and royalties.[143]

It seems clear, however, that the "vital interests of the United States" and the "wording of the Shelf Convention and the subsequent practice of the coastal states" were not the only factors which influenced the Council's decision. There is no evidence of any major oil deposits on the deep ocean floor, while the prospects of rich oil deposits on the continental slopes and rises are very promising.[144] If the boundary were set at some depth or distance which did not include the slopes and rises, the petroleum industry would lose its exclusive right to exploit the rich oil resources of these areas. Also, it seems that the petroleum industry would rather operate under the known perils of existing coastal state control than under the unknown perils of international legal-political arrangements yet to be agreed upon.[145]

The Commission on Marine Science, Engineering and Resources, however, reached the opposite conclusion. It recommended a "narrow" shelf:

> The seaward limit of each coastal nation's "continental shelf" should be fixed at the 200-meter isobath, or 50 nautical miles from the baseline for measuring the breadth of its territorial sea, whichever alternative gives it the greater area for purposes of the Convention.[146]

The Commission rejected the National Petroleum Council's position for a number of reasons. First, the Commission felt that the wording of the Shelf Convention and its legislative history did not support a "wide" shelf, and that it would be unfair to the landlocked nations. Second, there was a danger that coastal states with little or no important resources on their continental slopes and rises might use the claims to a "wide" shelf for the limited purpose of mineral exploitation as a basis for claiming exclusive authority over the superjacent waters, noting that Chile, Ecuador and Peru used the Truman Proclamation as the basis for their claims to sovereignty over the epicontinental sea. Thus the Commission felt that a "narrow" shelf would best serve the interests of national security and world peace.[147]

The Commission also recognized the need of the coastal state to have some authority over activities adjacent to its coast but outside the narrowly delimited continental shelf. Thus it recommended the establishment of an "intermediate zone," which would extend to the 2,500-meter isobath, or 100 nautical miles from the baseline for measuring the breadth of

the territorial sea, whichever alternative gives the coastal state the greater area. The coastal state would be given the exclusive right to authorize exploration and exploitation or mineral resources in the zone, but would not be given any rights to the resources themselves.[148] Unfortunately, while the Commission seems to have recognized the need of the coastal state to exercise authority over activities which might have a unique impact upon its important interests, the wording of the proposal seems to limit the authority of the coastal state to regulate activities to those involving the "utilization of the mineral resources."[149]

F. Appraisal and Recommendation

The North Sea Installations Act, the Triumph Reef case, and the Cortes Bank cases might seem to suggest that the coastal state needs a "wide" continental shelf to protect its important interests. As previously mentioned, however, international law already recognizes the right of the coastal state to exercise authority over activities outside the limits of the continental shelf which have a unique impact on important coastal interests under the concept of the contiguous zone, and there would be no valid reason to extend the continental shelf merely to protect these interests. This again points up the important function of the contiguous zone

concept. If decision-makers refuse to recognize a limited competence of the coastal state beyond the area of exclusive coastal authority to protect important coastal interests, then the coastal state may feel compelled to extend the continental shelf to protect these interests.

It should also be pointed out that the freedom of the seas is protected, not by the exercise of jurisdiction by some superstate or the coastal states, but by the principle of the "flag nation," under which all activities conducted on the high seas must be operated under the flag of some nation, which is then responsible for and has jurisdiction over the activities conducted under its flag. An activity not conducted under the flag of some nation is considered to be hostes humani generi, and subject to summary treatment.[150] Thus the private entrepreneur operating without the authorization or protection of a flag nation would have no rights under international law.[151] This would seem to provide a solution to the problems created by the questionable activities of the private entrepreneurs in the above cases, if the areas were found to be outside the limits of the coastal states' continental shelves.

There are valid arguments on both sides of the wide-narrow shelf controversy. Those favoring a wide shelf point out that the coastal state would be giving away billions of

dollars worth of potential resources vital to its security. Those favoring a narrow shelf, on the other hand, argue that a "wide" shelf would be unfair to the landlocked nations and nations in an unfavorable geological position and might give rise to more comprehensive claims to authority over the "wide" shelf and the superjacent waters above it.

Perhaps the real issue, however, is whether at the present time there is any urgent need to more precisely delimit the area of exclusive coastal authority, and whether we have sufficient information to make a rational decision as to the type of delimitation which would best serve the common interests of the world community. Much of the supposed urgency for a more precise delimitation of the continental shelf has been the fear that technology may soon make it possible for the developed nations of the world to exploit the resources of the deep ocean floor, and that the uncertainty of the existing legal framework might lead to conflict.[152]

The Commission on Marine Science, Engineering and Resources argues that the uncertainty of the existing legal regime of the deep ocean floor could discourage exploitation, as it does not guarantee the private entrepreneur exclusive access to the resources of a large enough area for a long enough time to insure any profit from the venture.[153] Likewise, it is not certain that the entrepreneur could prevent

"poachers" from congregating at the site of the successful operation, thereby avoiding the cost of initial discovery and reducing the possibility that the venture will be entirely unsuccessful.[154] Similarly, the underdeveloped nations are afraid that the existing legal regime might allow the advance nations under the "flag nation" concept or a res nullius theory to gain access to and control over the resources of the deep ocean floor, thereby creating a new form of "neo-colonialism."[155] By establishing an international regime for the deep ocean floor the underdeveloped nations hope to derive some economic benefit from any such exploitation. All of these proposals for a new regime for the deep ocean floor would have to have as one of their elements the establishment of a more precise delimitation of the continental shelf.[156]

Also, some writers have criticized the "wait and see" approach on the ground that it will allow a continued seaward expansion of coastal authority thereby endangering the freedom of the seas.[157]

All of these arguments appear to be unsupported by scientific evidence. At the present time all of the commercial quantaties of offshore petroleum have been produced from wells in waters 340 feet or less deep, and the hard mining industry is in a state of infancy. Excluding oil and gas, there was less than $200 million worth of mineral resources mined

directly from the ocean floor in 1967, and if sand, gravel, oyster shells and sulphur are excluded, the figure is reduced to $50 million.[158] In addition, the topography of the ocean floor creates a built in limitation on coastal expansion. Only 8 percent of the ocean floor lies within the 0 to 200 meter depth, and after the 200 meter line is reached the slope of the ocean floor becomes much steeper. The next 8 percent of the ocean floor lies within the 200 to 2000 meter depth, and it will be quite some time before there can be any "cost effective" exploitation at such depths.[159]

Thus there does not appear to be any immediate danger that the exploitability criterion will enable the coastal states to extend their jurisdiction seaward until the whole of the ocean floor is under exclusive coastal authority. Likewise, there does not appear to be any immediate probability of the advanced nations exploiting the resources of the deep ocean floor, or of the underdeveloped nations deriving any economic benefit from the internationalization of the deep ocean floor.

More important, however, it does not appear that we now have the necessary information to make a rational decision as to the type of delimitation which would best serve the common interests of the world community. In 1962 Professors McDougal and Burke warned:

> The degree of vagueness in the exploitability criterion, deplored by all commentators, seems nevertheless much less likely to produce consequential tension than would a criterion which, while certain and precise, would also limit coastal authority to only part of an exploitable area and perhaps permit completely free and uncontrolled access by others to areas beyond coastal control but still of particular concern to the coastal state. . . . At some point, no doubt, it will be necessary to place a more precise limit on exclusive coastal control, . . . but giving further concreteness to these general guides might best await the development in economic, political, and social conditions which are at present only vaguely discernible, but which will be determinative of the limits best designed to promote the common interests of all.[160]

Likewise, it is doubtful that we now have sufficient information to determine the type of regime for the deep ocean floor which would best serve the common interests of the world community. The lack of information which currently exists can be demonstrated by two recent proposals to restrict the uses of the deep ocean floor to "peaceful purposes."[161] The Malta resolution does not define the term "peaceful purposes," but a recent statement by Ambassador Pardo suggests that it would prohibit any military use of the ocean floor, and would even prohibit scientific investigation of a military nature.[162] The proposal by Senator Claiborne Pell of Rhode Island is less restrictive than the Malta proposal, but it would prohibit the stationing of any objects on the ocean floor which contained "nuclear weapons or any kinds of weapons of mass destruction."[163]

It would be impossible to consider all the ramifications of these proposals, but it is suggested that none of the major powers would be willing to give up any of their rights to use the ocean floor for military activities without an assurance that other states would not be able to violate the agreement. At the present time there do not appear to be adequate detection devices to insure compliance with such an agreement, nor are there adequate sanctions which could be applied against a state found to be violating it. [164] Any agreement without the above safeguards could destroy the existing balance of power. In addition, it would serve no useful purpose to prohibit military activities on the ocean floor when Polaris and Poseidon submarines could still cruise a few feet above the floor armed with nuclear weapons, and surface vessels equipped with nuclear missiles could still operate on the high seas. To be effective the prohibition would have to apply to the whole of ocean space.

The lack of information wich now exists on the question of the prohibition of military activities in ocean space was expressed by Professor Bilder in an address before the Naval War College on September 18, 1967:

> Should the United States seek a rule which prevents Soviet missile subs from approaching our own coasts even if the rule restricted the flexibility of our own Polaris submarines? As naval officers, do you really have sufficient information to now say which rule you would perfer?[165]

Similarly, Professor Young also comes to the conclusion that at the present time we do not have sufficient information to determine the type of regime for the deep ocean floor which would best serve the common interests of all:

> The conclusion to be drawn . . . is that it is prudent to make haste slowly. To be durable and satisfactory, a regime for deep-sea bottom resources must be based on a solid knowledge of geographical facts, of technological capabilities present and anticipated, and of political and economic realities. It is believed that the analysis and synthesis of these elements have not yet advanced to the stage where a decision of a permanent character can be made with wisdom.[166]

Thus it would appear that any attempt at this time to precisely delimit the continental shelf or to establish a juridical regime for the deep ocean floor is premature, and that our time and energy might better be spent in trying to analyse the factors relevant to the final solution of these problems.

## IV. THE ACCOMODATION OF THE COMPETING INTERESTS

### A. The Accomodation of Competing Interests under the Unilateral Claims

Both the Treaty of Paria and the Truman Proclamation specifically provided that the status of the superjacent waters and airspace were in no way affected by the claims. Yet it is clear that some interference with existing uses of ocean space is necessary if the claims of the coastal states are to have any meaning at all. Professor Lauterpacht could see no reason why the claims of the coastal states could not be accomodated under "the true objective of the freedom of the seas." The freedom of the seas was intended to allow the greatest possible use of the seas by all participants, and only a "rigid conception of the freedom of the seas impervious to reasonable requirements of economic life and scientific progress" would prohibit any new use of ocean space.[167]

Likewise, Dr. Mouton could see no reason why the right of the coastal state to explore and exploit the resources of the continental shelf could not be accomodated under the doctrine of the freedom of the seas:

> Therefore if yet another way of using the high seas has been discovered, we cannot reject such a use by saying that it interferes with existing kinds of use of the high seas. Using the high seas naturally and logically limits the use some other person makes of it if the place where we want to make use of the high seas happens to be the same one chosen by somebody else. It is also natural, that the one who can move easier, will have to give way for the one whose kind of use of the high seas involves a limitation in his possibilities to move or perhaps makes any move impossible. . . . All ships have to give way for a fisherman laying behind his nets or for a ship at anchor. Therefore there is nothing new in the fact that the freedom of navigation is a "limited" freedom, limited because other people may be exercising their rights on the high seas, at the same time and at the same place.[168]

Based on this enlightened view of the doctrine of the freedom of the seas, Dr. Mouton had no difficulty in finding that the construction of an installation for the exploitation of the natural resources of the continental shelf was merely a new way of exercising the right to use the high seas, "just as much as navigation of the seas, or fishing in these seas, or laying telegraph cables on the bottom of these seas."[169]

Unfortunately, some of the subsequent unilateral instruments made far more comprehensive claims to authority over the continental shelf and the epicontinental sea. These claims were far different in nature from the limited claims to jurisdiction and control over the mineral resources of the continental shelf. There were a number of factors which made it in the common interest of the world community to recognize a limited competence of the coastal state to authority over

the mineral resources of the continental shelf: the world wide need for oil and other mineral resources; the need for coastal state cooperation in the complex task of drilling, extracting, transporting, processing and storing petroleum and other mineral resources; the danger to coastal security posed by the presence of permanent installations near its territorial base of power; the effect on local oil reserves caused by the exploitation of offshore deposits which form part of larger deposits underlying the land mass; and the danger that with the magnitude of the investment, if exclusive control over the area could not be guaranteed, entrepreneurs might not be willing to undertake such a project, and the rich oil reserves of the continental shelf, vital to the world community, might not be developed.[170]

The same general community interests do not exist with regard to more comprehensive claims to the continental shelf. If states were allowed to make comprehensive claims over vast areas of the oceans, such as those of some of the Latin American states, the free ocean would be reduced to a series of disconnected lakes, and the inclusive interests of navigation, communications and fishing would be destroyed.[171] Thus it is not in the general interest to recognize such claims. As Professor McDougal commented:

> . . . /T/he claims that some our Latin American neighbors have made to expansive territorial seas are claims of

> special interest made without regard for their impact on others and with highly destructive consequences for the total production and distribution of goods and services. Such claims do not represent genuine exclusive interests because they can not be made with any promise of reciprocity. The only argument our Latin American friends have made to justify these claims is that if they have an extensive territorial sea they will sell the privilege of fishing and make money. Their changes for ultimate advantage, however, depends upon the assumption that everything else will remain the same. Should other states make comparable claims, there would be complete disintegration of the common interest and the Latin American states would suffer inestimable loss along with everyone else.[172]

These unilateral claims to extensive territorial seas are not valid under international law. In 1951, the International Court of Justice in the Anglo-Norwegian Fisheries Case stated:

> The delimitation of sea areas has always an international aspect; it can not be dependent merely upon the will of the coastal State as expressed in its municipal law. Although it is true that the act of delimitation is necessarily a unilateral act, because only the coastal State is competent to undertake it, the validity of the delimitation with regard to other states depends upon international law.[173]

When we examine existing international law we find that the practice of coastal states are no longer uniform with regard to the width of the territorial seas, but it would appear that the international community does not recognize claims in excess of twelve miles.[174]

## B. The Accomodation of Competing Interests under the Shelf Convention

### 1. Cables and Pipelines

The laying of cables and pipelines on the continental shelf presented very few problems. The provision which the International Law Commission ultimately recommended to the Conference state that subject to the right of the coastal state to take reasonable measures for the exploration and exploitation of the continental shelf, "the coastal State may not impede the laying or maintenance of submarine cables on the continental shelf."[175] It was understood by the Commission that this would include the right of the coastal state to impose conditions with regard to the route to be followed, and require cables to be relocated if this became necessary for the exploration or exploitation of the shelf. If it became necessary to relocate cables it was understood that the state (or the oil company) would have to pay the costs.[176]

With the exception of the addition of the word "pipelines" the Conference adopted the draft article as Article 4 of the Shelf Convention. While Article 4 does not mention the right of the coastal state to regulate the route to be followed, this would seem to be included within the "reasonable measures" which the state can take for the exploration and exploitation of the shelf.[177]

As far as this writer can determine there has been little if any conflict in this area.

2. Navigation and Fishing

In 1950 the Commission declared that the rights of navigation and fishing must not be impaired except "in so far as strictly necessary for the exploration of seabed and subsoil."[178] In 1951 the emphasis was reversed and it was stated that the exploitation "must not result in any substantial interference with navigation and fishing."[179] In 1953 the words "substantial interference" were changed to "unjustifiable interference," and a provision was added to include "fish production" within this protection.[180] In 1956 the words "fish production" were changed to read "conservation of living resources of the sea."[181]

The Commission did not attempt to define "unjustifiable interference," but one reason may have been that it had provided for the submission of any dispute to "the International Court of Justice at the request of any of the parties."[182] Unfortunately, this provision was rejected by the Conference, which instead substituted an Optional Protocal for the compulsory settlement of disputes.[183]

Article 5(1) of the Shelf Convention now reads:

> The exploration of the continental shelf and the exploitation of its natural resources must not result

> in any unjustifiable interference with navigation, fishing, or the conservation of the living resources.

The Commission also sought to balance the right of the coastal state to construct installations necessary for the exploitation of the natural resources with the inclusive interests of navigation and fishing. At first the Commission seemed to consider the inclusive interests of primary importance, and prohibited the construction of installations in "straits, narrow channels or on recognized sea lanes."[184] In 1953 the Commission narrowed the restrictions by prohibiting installations only "in narrow channels or on recognized sea lanes essential to international navigation."[185] In 1956 the restrictions were narrowed even further, and installations were prohibited "on sea lanes essential to international navigation" only when "interference may be caused,"[186] Except for the deletion of the words "narrow channels" the Conference accepted the wording of the Commission's draft Article 71(5) as Article 5(6) of The Shelf Convention:

> Neither the installations or devices, nor the safety zones around them, may be established where interference may be caused to the use of recognized sea lanes essential to international navigation.

With regard to fishing, the installations themselves presented no problems, but Article 5(7) of the Shelf Convention provides that the coastal state must undertake "all appropriate measures for the protection of the living resources of the sea from harmful agents."

The Shelf Convention also contains other provisions with respect to the rights and duties of the coastal state with regard to the construction of installations. Article 5(3) provides that the coastal state may establish safety zones around these installations up to a maximum of 500 meters, and that all ships must respect these zones. Article 5(4) provides that the installations shall not have the status of an island, nor shall they have a territorial sea of their own. Finally, Article 5(5) provides that due notice of the construction of any installation must be given, that permanent means for giving warning of their presence must be maintained, and that any installations that are abandoned or disused must be removed.

3. Scientific Research

In 1956 the Commission tried to relieve the fears of the scientific community that the rights of the coastal state to explore and exploit the continental shelf might restrict scientific research in the shelf area:

> The proposals made by the Commission in its report for 1953 /that the coastal state exercises sovereign rights for the purpose of exploring and exploiting the resources of the continental shelf/ caused some anxiety in scientific circles, where it was thought that freedom to conduct scientific research in the soil of the continental shelf and in the waters above would be endangered. In so far as such research are conducted in the waters above a continental shelf, this anxiety seems to be unjustified since the freedom to conduct research in

> these waters--which still form part of the high seas--is in no way affected. The coastal State will not have the right to prohibit scientific research, in particular research on the conservation of the living resources of the sea. The consent of the State will only be required for research relating to the exploration or exploitation of the seabed or subsoil. It is to be expected that the coastal State will only refuse its consent exceptionally, and in cases in which it fears an impediment to its exclusive rights to explore and exploit the seabed and subsoil.[187]

At the Conference the Fourth Committee adopted a proposal by Denmark which provided that the rights of the coastal state must not interfere with fundamental oceanographic or other scientific research "carried out with the intention of open publication."[188] This proposal was incorporated into Article 5(1) of the Shelf Convention. Unfortunately, the meaning of the provision became confused when the Committee also adopted a French proposal which required the coastal state's consent for any research "into the soil or subsoil of the continental shelf."[189] The Drafting Committee of the Conference, in considering the articles on the continental shelf, replaced the just quoted words with the following: "concerning the continental shelf and undertaken there."[190] The proposal with the changes made by the Drafting Committee was adopted by the Plenary Session and became Article 5(8):

> The consent of the coastal State shall be obtained in respect of any research concerning the continental shelf and undertaken there. Nevertheless the coastal

> State shall not normally withhold its consent if the request is submitted by a qualified institution with a view to purely scientific research into the physical or biological characteristics of the continental shelf, subject to the proviso that the coastal State shall have the right, if it so desires, to participate or to be represented in the research, and that in any event the results shall be published.

The wording of this article raises some very serious problems. It is obvious from the original wording of the article that it was only intended to apply to research involving physical contact with the subsoil and seabed and not to research conducted in the superjacent waters. Also, the real purpose of the article was to prevent exploitation of the shelf for commercial reasons under the guise of scientific research.[191] Yet, as will be shown later, it is not certain that all states will so interpret the article.

Another problem is created by the use of the term "qualified institution." Because of the large amount of capital required for scientific investigation, and the lack of return on the investment, most of the purely scientific research is being conducted by the nation state, and in this country much of the oceanographic research is being conducted by the Office of Naval Research, with the use of military personnel.[192] Would this be considered a "qualified institution?"

There are at least two precedents holding that scientific research of a peaceful nature can be conducted with

military personnel. Article 1 of the Antartic Treaty states that "Antartica shall be used for peaceful purposes only," but that nothing "shall prevent the use of military personnel or equipment for scientific research."[193] In fact, much of the scientific research in Antartica has been conducted by military personnel. Likewise, Article IV of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, provides that the "use of military personnel for scientific research or for any other peaceful purposes shall not be prohibited."[194] It will be remembered that all of our early astronauts were military personnel. Thus there does not appear to be any reason why the Office of Naval Research should not be considered a "qualified institution."

Similarly, if the words "purely scientific research" were strictly construed, much valuable scientific research might be prohibited, as nearly any scientific discovery might possibly have a military application.[195]

At least part of the problem might be solved if some international agency were allowed to conduct most of the scientific research involving the continental shelves. In our tension filled world, national decision-makers are all to aware of the potential abuse and misuse of scientific projects conducted by other nations near their territorial

bases of power. Also, as Professor Burke points out, industry is not likely to share its hard won secrets with potential competitors, nor is the nation-state likely to publish information which might have a military application.[196] Thus there would appear to be far less chance of conflict and a much better chance of dissemination of information and the prevention of duplication by the use of an international agency to conduct scientific research on the continental shelf.

C. Subsequent Practice of the Coastal States

The coastal state's limited right to use the shelf for the purpose of exploring and exploiting the natural resources has resulted in substantial interference with the more traditional uses of ocean space. While Article 5(1) of the Shelf Convention provides that the right of the coastal state shall not "result in any unjustifiable interference with navigation," the existence of over 2000 oil installations in the Gulf of Mexico has led to the establishment of shipping "Safety Fairways and Anchorage Areas."[197] While vessels are not required to use these lanes, it would appear that in the event of a collision between a vessel and an installation outside a fairway, that the Coast Guard Marine Board of Investigation would consider the operation of the vessel outside the fairway as a presumption of negligence.[198]

While the installations themselves do not represent any threat to fisheries, except in so far as the installations might present a navigational hazard to fishing vessels, the real threat to fisheries lies in the danger of pollution of the waters from leaks. The recent leak of a Union Oil Company well in the Santa Barbara Channel in January of this year points up the potential danger of erecting oil wells in fault areas.[199] The oil well leaked some 21,000 gallions of oil a day into the Santa Barbara Channel for twelve days before the leak was sealed, and turned the area into a "dead sea." It is estimated that it will be years before the ecology of the area fully recovers.[200]

Likewise, scientific investigation has been greatly restricted by the requirement of Article 5(8) that the consent of the coastal state be obtained for any research concerning the continental shelf. The difficulty in obtaining the consent of the coastal state has already thwarted several scientific projects.[201] While it has been suggested that Article 5(8) should only apply to research involving actual physical contact with the subsoil and seabed, it is not certain that all states will so interpret the article. Recently, several Russian scholars stated that "physical and biological phenomena occurring in waters superjacent to the continental shelf may not be correctly understood and analyzed without

simultaneously researching these phenomena on the seabed.[202] Under this interpretation, any research involving the superjacent waters would require the consent of the coastal state.

Since the limited right to explore and exploit the resources of the continental shelf has already restricted the inclusive interests in the shelf area, what right, if any, does the coastal state have to further restrict these interests by using the shelf for purposes unrelated to the exploration or exploitation of natural resources? Some writers seem to assume that the coastal state exercises "sovereignty" over the continental shelf, and that any use of the shelf would be permissible. Thus Stang, while admitting that at the present time the United States has only authorized the use of the outer continental shelf for the exploration and exploitation of mineral resources, states:

> Nor is the person /using the shelf for purpose unrelated to the exploration or exploitation of mineral resources/ protected from potentially competing users of the Shelf, e.g., a foreign submarine skipper, oceanographer, or fisherman who wants to exercise his respective high seas freedom, such as the freedom of operation in the water column over the Shelf. . . . But if the "third person" has a lease or other statutory authorized permission from the U.S. Government for the Shelf area concerned, he would be protected from such interference.[203]

This statement appears to suggest that any use of the shelf which is "authorized" would be permissible, and that under no circumstances would an inclusive interest ever be

permitted to limit or restrict such an authorized use. There are no criteria set down for determining the priorities of the competing interests.

Professors McDougal and Burke are also willing to admit that the coastat state has interests in the continental shelf which are unrelated to exploration and exploitation of the natural resources, but they are not willing to disregard the inclusive interests of the world community. Thus, while admitting that the coastal state does have other interests in the continental shelf, they add a caveat:

> These conclusions are not equivalent, of course, to suggesting that all possible uses of the continental shelf by the coastal state must be considered equally permissible and that all possible uses by the non-coastal states are impermissible. It is one thing to confer upon the coastal state sovereign rights to explore and exploit the continental shelf for its natural resources, with appropriate limitations to secure that the exercise of these rights is compatable with inclusive uses, and something else again to regard any use of the continental shelf as sufficiently important to merit limitations on navigation and fishing /and other inclusive uses/. . . . Whether or not other uses are reasonable, however, would depend . . . on their reasonableness in terms of the importance of the local interests at stake, the significance of the more inclusive interests affected, and the compatability of the use proposed with inclusive uses.[204]

Thus Professors McDougal and Burke realize that the true function of the law of the sea is the protecting and balancing of all common interests, both inclusive and exclusive, and that both sets of interests must be considered in the

discussion of any proposed use of the continental shelf. Thus a methodology is needed which will consider the impact of the proposed use on both sets of interests in determining its reasonableness. It is suggested that the same factors relevant to the determination of the reasonableness of activities involving the exploration for and exploitation of the natural resources of the continental shelf are equally determinative with regard to the reasonableness of other proposed uses of the shelf which were neither considered nor provided for by the Shelf Convention.[205]

## D. A Methodology for the Accomodation of the Competing Interests

### 1. Basic Community Policies Relevant to the Public Order of the Oceans

Before examining the problem of the accomodation of the competing uses under the doctrine of the continental shelf, it is necessary to first determine the basic community policies relevant to the public order of the oceans.

Traditionally the function of the law of the sea has been that of protecting and balancing the common interests of the world community, both inclusive and exclusive, while at the same time rejecting those assertions of special interests which are not in keeping with these common interests.[206]

While an exclusive interest is a claim or demand by a single state to exclusive control or authority over an area or activity which the claimant can not share with others, it is, nevertheless, protected as a common interest because it is an interest with respect to which other states share a common concern. For example, all states are concerned with the security of their territorial base of power, and, therefore, each state in its own interest recognizes the right of the coastal state to claim a narrow belt of adjacent waters as a "territorial sea," and to exercise exclusive authority over the area. Likewise, it soon became evident that an occassional exercise of authority over activities beyond this belt which have a unique impact upon important coastal interests had to be honored if the common interests of all states to the security of their land masses were to be protected. Therefore, while an exclusive interests is a claim by a single state to jurisdiction or control over an area or activity, it is in the interest of all states to recognize the claim, as each state can make a similar claim in its own right under the doctrine of reciprocity.[207]

A special interest, however, is a claim which is disruptive in its impact upon others, and which bears no rational relationship to a genuine exclusive interest which can be made with the promise of reciprocity. For example, if

a state claimed a 200 mile territorial sea, such a claim would be highly disruptive of the inclusive interests of the other states. If other states made similar claims then the free ocean would be reduced to a series of disconnected lakes and the general interests of navigation, communications, and fishing would be distroyed. If this happened, the inclusive interests of the claimant would be destroyed along with those of the other members of the world community. Thus it is a claim which will operate to the benefit of the claimant only if other states do not make similar claims, and, therefore, can not be made with the promise of reciprocity.[208]

The exclusive interests of the coastal state are often expressed by such labels as "internal waters," "territorial sea," "contiguous zones," and "continental shelf," often lumped together under the very broad concept of "security." Likewise, the inclusive interests of the world community are often expressed by such concepts as "innocent passage," "freedom of navigation and fishing," "freedom of cable-laying," and "freedom of flight," often grouped together under the doctrine of the "freedom of the seas."[209]

These highly abstract and contradictory concepts, however, are of little value to the decision maker in resolving the problem of the accomodation of the competing interests, unless he understands the purpose which these inherited prescriptions were intended to serve.

Under the process of interaction, virtually all the actors in the world social process seek to make use of the oceans for a variety of purposes. The objectives which they seek to obtain involves the promotion and protection of the entire value process. It is not too surprising, therefore, that the objectives of different participants may conflict. The conflict may arise within a single type of use, such as two vessels seeking to use the same ocean space at the same time, or between different uses, such as a claim by one state to temporary exclusive access to and control over an area of the high seas for weapons testing, thereby restricting navigation and fishing in the immediate area.[210]

One of the factors relevant in this process of interaction is the geographic location of the interaction of interests in relation to the land masses. As the interaction moves towards the coastal state's territorial base of power the higher becomes the degree of concentration of exclusive interests which the coastal state may have in the area. Conversely, as the interaction moves away from the land mass, the more pronounced become the inclusive interests of the world community.[211]

Because of the high degree of concentration of exclusive interests in the waters immediately adjacent to the land masses, and the probability of activities in these areas having an

impact upon important coastal interests, the coastal states make their most comprehensive claims to authority over these waters under the label of "internal waters." The degree of authority exercised by the coastal states over the internal waters is the same as that exercised by them over their territorial bases of power. The authority claimed over the next adjacent waters under the label of "territorial sea" is only slightly less comprehensive, and the inclusive right of "innocent passage" is the only recognized exception to the coastal states' soverignty over these waters.[212]

In the contiguous high seas the coastal states make limited claims to authority over activities which have a unique impact upon important coastal interests. These claims have been made under such labels as "contiguous zones," "fisheries zones," "custom zones," "defensive areas," and "continental shelf." Other participants have made opposing claims under such labels as "freedom of navigation and fishing," "freedom of scientific investigation," and the very broad concept of "freedom of the seas."[213]

Recently some decision-makers have attempted to rigidly restrict the rights of the coastal states in these contiguous high seas areas. This "international myopia" places too much emphasis on the inclusive interests under an absolutistic conception of the doctrine of the freedom of

the seas, and ignores the complementary half of the law of the sea which protects the exclusive interests of the coastal states. Some coastal states, on the other hand, have made comprehensive claims over wide belts of adjacent waters by means of unilaterial extensions of their territorial seas. This form of "provincial myopia" ignores the inclusive interests of the world community.[214]

Since the continental shelf is adjacent to the coastal state but outside the territorial sea, the function of the decision-maker becomes one of protecting and balancing both sets of common interests. To aid the decision-maker in this highly complex task, Professors McDougal and Burke list some of the factors which the decision-maker should consider in protecting and balancing these competing sets of interests:

> The task which confronts a decision-maker in a particular controversy is, accordingly, not that of automatically applying inherited prescriptions but of giving such prescriptions a new operational meaning by weighing all the different factors and policies which are significant in the context before him. . . . It includes such items as the interests sought to be protected by the claims, the relative location and extent of the ocean area affected, the extent of authority or immunity claimed, the activities subjected to authority or affected by it, the degree and duration of interference with existing uses, the historical factors involved such as custom and priority in usage, the relationship between the authority or immunity claimed and the interests sought to be protected, and the significance of all the interests affected, exclusive and inclusive, to all the participants, including the whole community as well as the claimants.[215]

## 2. Community Policies Relevant to the Accomodation of the Competing Interests under the Doctrine of the Continental Shelf

As previously mentioned, it was a series of factors which made it in the common interests of the world community to recognize the exclusive authority of the coastal state over the natural resources of the continental shelf. Likewise, all the unilateral claims to the resources of the continental shelf recognized some inclusive interests in the shelf area, although the degree of recognition varied according to the nature and extent of the claim. The Truman Proclamation, for example, which made only a limited claim to the mineral resources of the continental shelf, recognized the complete freedom of superjacent waters and airspace. Other states, however, made far more comprehensive claims to the continental shelf, and as a result were much more disruptive in their impact on the inclusive interests of the world community. Chile, Ecuador and Peru, for example, by a tripartite agreement signed at Santiago, Chile, on August 18, 1952, extended their sovereignty over a zone extending 200 nautical miles seaward from their coasts to "ensure the conservation and protection of its natural resources." The only inclusive right recognized by the agreement was "the innocent and inoffensive passage of vessels of all nations through the zone."[216]

The Shelf Convention rejected these comprehensive claims to authority over the continental shelf and epicontinental sea, and instead recognized a limited exclusive right of the coastal state to explore the shelf and to exploit its natural resources. The Shelf Convention attempted to balance the exclusive rights of the coastal state with the inclusive interests of the world community by providing in Article 5(1) that the exclusive right to explore the continental shelf and to exploit its natural resources "must not result in any unjustificable interference with navigation, fishing or the conservation of the living resources . . . or result in any interference with fundamental oceanographic or other scientific research carried out with the intention of open publication." Unfortunately, "unjustifiable interference" was not defined. It would seem, therefore, that a methodology must be established to determine the reasonableness of a particular use of the shelf in the event of a conflict between these two sets of interests.

With regard to the need to balance the exclusive right of the coastal state to explore and exploit the shelf with the inclusive right of navigation, Dr. Mouton makes the following critical observation:

> Much depends of course on the place where the installation is erected. This factor plays a more serious role if a number of these installations are going to

> be built in the same area. For a "cluster" of these installations the answer to the question, whether they constitute a hinderence for shipping largely depends on the location, and of course the distance between them. If located somewhere in a bay or gulf, not frequented by shipping we can safely say that no practicle obstical exists. . . . It is, however, quite clear that if oil companies were left free in putting their constructions wherever they wanted, irrespective of other interests, a serious obstruction of shipping may arise, for instance in narrow passages, straits frequented by shipping or approaches to harbors.[217]

It was just such a problem that led to the creation of "Safety Fairways" in the Gulf of Mexico. An official survey conducted in 1964 showed that there were some 1,783 permanent oil installations in the Gulf, 1,590 of which were located in or near shipping lanes. Also, it was reported that shipmasters were unable to find the key sea buoy at the entrance of the channel to the Port of New Orleans because it was hidden by an oil installation.[218]

Similarly, the North Sea presents another arena of potential conflict. It is the source of one of the world's richest fisheries, vital to the inhabitants of the surrounding states. Also, it is an important trade route for the densely populated and highly industrialized nations which surround it. Some 750 ships a day pass through the Straits of Dover, and Rotterdam is the world's leading seaport. In addition to the heavy volumn of traffic, the problem is further complicated by the frequency of bad weather.[219]

The existence of such important inclusive interests might outweigh or require limitations on the rights of the coastal states to explore and exploit the shelf of the North Sea.

As previously mentioned, the existence of installations in and of itself does not present any conflict with the inclusive right of fishing. In fact, in the eight years following the major expansion of oil activities in the Gulf of Mexico in 1957, the fish catch in the area doubled.[220] The real danger to the living resources of the sea lies in the possibility of harmful agents, such as oil, being introduced into the sea from leaks in the installation. Thus it would seem that the coastal state must insure that adequate regulations are provided to protect the living resources.

There does not appear to be any problem with the accomodation of scientific research, other than the fear of the coastal state that the activity might be used as a cover for exploitation or espionage. It is suggested, however, that the right of the coastal state under Article 5(8) of the Shelf Convention to take part in the activity provides an adequate safeguard to insure that the privilege will not be abused.[221] Also, there is no reason why much of this research could not be conducted by some international agency such as the Intergovernmental Oceanographic Commission (OIC) of the United Nations Education, Scientific and Cultural Organization (UNESCO).[222]

Thus it would appear that there are a number of factors relevant to the problem of protecting and balancing both sets of competing interests. Among the factors relevant in determining whether an activity involving the exploration of the continental shelf or the exploitation of its natural resources "unreasonably" or "unjustifiably" interferes with inclusive interests would be the location of the activity and the importance of the existing inclusive interests in the area, the degree to which the activity will interfere with the existing uses, and alternative modalities of accomodation, such as the establishment of "safety fairways" or regulations as to the number of installations or the distances between them.

It is suggested that these same factors would be relevant to the accomodation of the emerging uses of the continental shelf. Any new use of the continental shelf proposed by the coastal state must be considered in the context of its impact on the inclusive interests of the world community, and, conversely, any proposed use of the shelf by other states must be considered in the context of its impact upon important coastal interests.

While navigation, fishing, cable-laying and scientific inquiry have only a casual impact on coastal interests, other uses might endanger the security of the coastal state. Thus

the same factors which made it in the common interest of the world community to recognize the exclusive right of the coastal state to explore and exploit the natural resources of the continental shelf, might also make it in the common interest to grant the coastal state the authority to prohibit other states from constructing military installations on its continental shelf.[223] To deny a limited competence of the coastal state to prohibit certain activities which have a unique impact on important coastal interests might result in the coastal state asserting a comprehensive claim to authority over the continental shelf as witnessed by the North Sea Installations Act.

Similarly, there is no valid reason why the coastal state should not be permitted to use the continental shelf for other purposes, so long as the proposed use does not unreasonably interfere with inclusive uses. If the coastal state constructed a military installation on the shelf in such a way that it was not placed in an important sea lane or fisheries area, it would be easy enough for vessels to avoid the installation and any reasonably sized safety zone established to protect it, and it would not be unreasonable to require that cables and pipelines be routed around the installation and its protective zone.

It would be impossible to consider all the new uses of the ocean floor made possible by modern technology or to predict what new uses might become possible in the near future. It is certain, however, that if conflict is to be avoided, the decision maker must attempt to accomodate these emerging uses, and, when conflicts do arise between the emerging use and existing uses, he must weigh and balance all factors relevant to the particular controversy in determining the reasonableness of the proposed use. Among the factors relevant to this determination would be the number and importance of the participants, the size of the area affected and the duration of the proposed use, the importance of the interests sought to be acquired or protected, the importance of the existing uses and the degree to which they can be accomodated with the proposed use, alternative modalities for accomplishing the same objectives, and the significance of all interests affected, not only to the immediate participants, but to the other members of the world community as well.

This task is not an easy one, but no other alternative solution seems to be available. The coastal states will not be willing to accept a solution which unduely restricts their rights to develop the adjacent submarine areas, and which fails to recognize their right to protect their important coastal interests. Likewise, the world community will not be

willing to accept a solution which grants the coastal states a comprehensive competence over their continental shelves, thereby endangering all of the inclusive interests. If the public order of the oceans is to be maintained, then both sets of interests must be protected. Neither absolute sovereignty nor a rigid conception of the doctrine of the freedom of the seas serves this function.

## V. THE ACCOMODATION OF THE EMERGING USES UNDER THE EXISTING LAW OF THE SEA

Now that we have examined the emerging uses under the doctrine of the continental shelf, it might be useful to briefly examine the emerging uses under other aspects of the law of the sea.

Recently the Oceanographic Commission of the State of Washington sponsored a project by the University of Washington, Honeywell, Inc., and the Battelle Memorial Institute, to study the feasibility of constructing a permanent scientific installation on the Cobb Seamount, which is located in the Pacific some 270 miles west of the State of Washington. The mount rises from a 9000 foot base to within 122 feet of the surface. The summit is flat and contains an area of approximately twenty acres. This summer the project intends to erect a manned habitat on the summit as the first step to the construction of a permanent scientific installation. The Naval Underwater Warfare Center has also made preliminary studies of the Cobb Seamount as a possible site for a manned underwater operational support base.[234]

At the present time the juridical status of the deep ocean floor is not clear. Some writers argue that the deep ocean floor is a res nullius, subject to national appropriation by "effective occupation." These writers argue that the Shelf Convention offers ample proof that the status of the ocean floor can be juridically separated from that of the superjacent waters, and that the isolated claims of England to ownership of pear and chank fisheries off the coasts of Celyon and Bahrein, and those of the Bey of Tunis to sponge beds under areas of the high seas provide further evidence that the deep ocean floor is subject to national appropriation.[225] Other writers, however, argue that the deep ocean floor is res communis, the property of everyone, and not subject to national appropriation by any state. They point out that the Shelf Convention rejected the theory that the continental shelf was a res nullius, and only granted the coastal states limited rights to explore and exploit the shelf. Also, they point out that the ocean floor can not be effectively occupied in the same manner as land territory and that to reduce the term to a meaningless phase would raise the danger of "paper claims" being made to vast areas of the ocean floor.[226]

Even under the res communis theory, however, writers agree that temporary claims to exclusive control over areas

of the high seas are permissible so long as they do not unreasonably interfere with the inclusive uses of the areas.[227] In the past, states have made limited claims to temporary exclusive access to and use of areas of the high seas for purposes such as naval maneuvers, weapons testing, and rocket and missile experimentation, but the areas involved were more or less isolated from intensive community interests.[228] Yet some interference with inclusive interests has occurred. For example, in July 1961, the Soviet Union stopped and redirected several foreign merchant vessels in the Baltic Sea because of gunnery practice by the Soviet Baltic Fleet in the area.[229]

The real issue in the Cobb Seamount case is whether or not it is in the common interests of the United States and the world community for the United States to make a comprehensive claim to exclusive authority over the area. In the opinion of this writer, it is not.

The opinions of writers on the juridical status of the deep ocean floor are of limited importance, as they do not represent the practice of states, and, since there is no practice of states in this regard, there have not been any expectations created. The United States is now in a position to strongly influence the future practice of states with regard to claims to the deep ocean floor by the precedent which it now establishes.

To claim a comprehensive competence over an area of the deep ocean floor under a label such as "sovereignty," would encourage others to do likewise. While existing technology does not now make it possible for man to use the ocean floor except in relatively shallow areas, there are some 1400 known seamounts in the Pacific, and it is estimated that this is only ten percent of the actual number existing in that basin alone.[230] Thus it is quite possible that the technologically advanced nations will soon be able to use areas of the ocean floor beyond the limits of the continental shelf. Comprehensive claims to areas of the ocean floor beneath the high seas might well affect the status of the superjacent waters and destroy the freedom of the seas which has served the common interests of mankind so well.

Instead, it would seem that the United States would be far better off to claim a temporary exclusive use of the area under the doctrine of the freedom of the seas. From what this writer has been able to discover, it does not appear that the Cobb Seamount is an area of intensive community interests, and that the use of the seamount by the United States would not unreasonably interfere with important community interests. If the United States based its claim to temporary use of the seamount on the doctrine of the freedom of the seas it would then be able to consider the

legality of other claims under the policies relevant to the freedom of the seas. Such factors as the location of the area, the size of the area involved, the comprehensiveness and duration of the claim, the importance of existing uses of the area, and the ability to accomodate the existing uses with the authority claimed would all be relevant in determining the validity of the claim.

Similarly, the methodology might be useful for solving the problem of the emerging uses of the water column. Science has already proven that fishery yields can be greatly increased by scientific methods.[231] Efforts are now being made to eliminate the waste created by the long food chain from phytoplankton to zooplankton to fish, by harvesting zooplankton which feed directly on the phytoplankton. Also, attempts are being made to use remote areas of the ocean, which, because of the depth of the water and the lack of currents, have very little natural life. The plan is to introduce life into the area, and to keep the life cycle going by means of artificial upwelling.[232] Aquaculture may well provide the answer to the world's food problem. Unfortunately, at the present time the law of the sea does not protect aquaculture beyond the territorial waters of the coastal state, and the freedom of fishing seems to grant all states the right of free access to fisheries regardless of any efforts to improve the yield

made by any of the participants. Perhaps the importance of the activity in relation to the growing food problem would justify some interference with existing uses of the high seas. Again, the solution of the problem is not that of automatically applying some pre-existing prescription such as the "freedom of fishing," but rather that of analyzing all the factors relevant to the particular controversy. In this case it would seem that aquaculture should not be permitted in important sea lanes or in already existing fisheries areas, as the pre-existing uses of the area would have created reasonable expectations on the part of the participants, and the importance of the existing uses would outweigh the importance of the proposed use. On the other hand, the use of some remote area of the high seas with little or no existing interests would not be unreasonable. If the area is not extensively navigated or has no important natural fisheries then no expectations have been created. It is also suggested that the great importance of food resources to the world community might outweigh some interference with existing uses.

Thus we can see that the real solution to the problem of the accomodation of the emerging uses is a proper understanding of the true function of the law of the sea, the protecting and balancing of all the common interests, both

exclusive and inclusive, and the widest possible sharing of values among the peoples of the world. The coastal state must be willing to limit its claims to those necessary for the protection of its important coastal interests, and the world community must be willing to recognize the right of the coastal state to protect these interests, while at the same time seeking the widest possible accomodation of uses by the participants of ocean space. Each participant must in turn seek to serve the common interests of all. The law of the sea must be flexible enough to accomodate the continuously emerging uses made possible by advances in technology. No other rational solution exists. The failure to accomodate the common interests of the world community, both inclusive and exclusive, will result in a breakdown of the existing public order of the oceans, and everyone will lose in the process.

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